



Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment: Description and Results for Marine Sediment QA10SED01

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NO.7792
2011

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

**Interlaboratory Analytical Comparison Study to Support
Deepwater Horizon Natural Resource Damage
Assessment: Description and Results for Marine Sediment
QA10SED01**

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September 2011

NOV 30 2016

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ABSTRACT

To support natural resource damage assessment (NRDA) in response to the Deepwater Horizon (DWH) oil spill in the Gulf of Mexico, a large number of coastal sediment and tissue (i.e., oysters) samples have been collected outside of the spill zone to define baseline environmental conditions prior to being exposed to oil. Analysis of oiled sediments and oil-exposed oysters will continue for the foreseeable future. To support these efforts, NOAA will require additional analytical laboratories to perform NRDA sample analyses. To compare the data among these laboratories, inter-laboratory comparison studies have been initiated with the results from the first exercise, marine sediment QA10SED01 reported here. In this exercise, selected polycyclic aromatic hydrocarbons (PAHs), alkylated PAHs, hopanes, and steranes were determined in the exercise material, which consisted of wet frozen sediment, and in SRM 1941b Organics in Marine Sediment. The results from this first exercise are reported along with a summary of the analytical methods used.

INTRODUCTION

On April 20, 2010, a fatal explosion, fire, and sinking of BP's Deepwater Horizon drilling rig occurred approximately 40 miles off the Louisiana coast. The disaster resulted in the discharge of tens of thousands of barrels of oil per day from the seafloor into the Gulf of Mexico. In what has become the worst offshore oil spill in U.S. history, a wide expanse and variety of natural resources have become exposed and potentially impacted by oil and other consequences of the spill. Under the Oil Pollution Act, those responsible for an oil spill are liable for clean-up and for natural resource damages. Several federal and state agencies are conducting a natural resource damage assessment (NRDA) to determine what resources have been injured and what uses of the resources have been lost due to the spill.

To support this NRDA, the trustees and BP's representatives have been collecting and analyzing tens of thousands of environmental samples to characterize both pre-spill and post-spill environmental conditions. A broad range of sample types have been collected including oil in various forms, water, sediment, and biota. For the foreseeable future, subsequent sampling and analysis will be required. In addition, numerous other entities have collected environmental samples for hydrocarbon analysis and submitted them to different laboratories throughout the country.

In the past the National Institute of Standards and Technology (NIST) has helped benchmark and improve the quality of analytical data gathered on the marine environment by administering interlaboratory comparison exercises. To compare the data among the many laboratories analyzing samples from this spill, the National Oceanic and Atmospheric Administration (NOAA) has requested that NIST coordinate interlaboratory comparison studies with sediment, crude oil, and bivalve tissue being the three matrices of interest. These studies are performance-based with each laboratory using its current methods for analysis of similar matrices that it would use for its program customers. The target analytes for each study are selected polycyclic aromatic hydrocarbons (PAHs), alkylated PAHs, hopanes, and steranes. More than three dozen laboratory facilities were contacted by NOAA and invited to participate in the studies; for all three matrix studies a large number of laboratories agreed to receive samples and report their analytical results to NIST.

The data received from 33 laboratories for the marine sediment QA10SED01 are summarized in this report along with summaries of the analytical methods used by each laboratory. Numerical indices, z-

and p-scores, are used to assess and track laboratory performances for accuracy and precision, respectively, and to provide a mechanism for assessing the comparability of data produced by the participating laboratories for the target analytes.

SOURCE OF MATERIAL

The sediment material used for the exercise consisted of the fine-sieved fraction remaining from the preparation of SRM 1944 New York/New Jersey Waterway Sediment [1]. The sediment was collected from six sites in the vicinity of New York Bay and Newark Bay in October 1994 using an epoxy-coated modified Van Veen-type grab sampler designed to sample the sediment to a depth of 10 cm. A total of approximately 2100 kg of wet sediment was collected from the six sites. The sediment was freeze-dried, sieved (nominally 250 μm to 61 μm was used for SRM 1944 and <250 μm was used for QA10SED01), homogenized in a cone blender, radiation sterilized at an estimated minimum dose of 3.2 megarads (^{60}Co). The fine-sieved fraction (<250 μm) was wetted by the addition of approximately 47% (mass fraction) of HPLC-grade water. For the interlaboratory study, the participants received wet frozen sediment. The mean water composition was 47.4% with a standard deviation of 0.2%.

SAMPLE DISTRIBUTION

Three jars of wet frozen sediment were distributed to each of 40 laboratories in August and September 2010. Each laboratory was requested to analyze three samples of Marine Sediment QA10SED01 and at least one or more samples of SRM 1941b Organics in Marine Sediment using their laboratory's and/or program's analytical protocols, for determination of the concentrations (mass/mass [dry-mass basis]) of the parent polycyclic aromatic hydrocarbon (PAH) compounds, alkylated PAH compounds, hopanes, and steranes currently being determined in their laboratory.

The instructions including the list of target analytes sent to participants are attached in Appendix A.

EVALUATION OF EXERCISE RESULTS

Establishment of the Assigned Values

Laboratory data submission: Each participating laboratory was asked to submit data from three replicate determinations of the "unknown" material QA10SED01 and was requested to report results of concurrent analyses of NIST SRM 1941b Organics in Marine Sediment. Laboratories were requested to report these results to three significant figures and to provide brief descriptions of their extraction, cleanup, and analytical procedures.

Determination of laboratory analyte means: For each laboratory, the laboratory analyte mean of the three sample results (S1, S2, and S3) was calculated for each analyte. Non-numerical data were treated as follows: A mean "<value" was used when three "<values" were reported; NA (not analyzed/determined) was used for three reported NAs; and, if the reported results were of mixed type, e.g., S1 and S2 were numerical values and S3 was reported as "<value", the two similar "types" were used to either determine the mean or to set a non-numerical descriptor.

Determination of assigned values: The assigned values are the means of the acceptable data as defined here. For a particular analyte, the performance on the reference material, SRM 1941b, was initially deemed acceptable for the purpose of this exercise if the laboratory result was within 30 % of the upper and lower limits of the confidence interval for analytes listed in the Certificate of Analysis for SRM 1941b [2]. The criterion of 30 % is the same as the one that was used for the National Oceanic and Atmospheric Administration (NOAA) Mussel Watch and National Status and Trends Quality Assurance Programs [3]. If a laboratory demonstrated acceptable performance on a particular analyte in the reference material, that laboratory's results for that analyte in the corresponding "unknown" exercise material was then used in the calculation of the analyte's exercise assigned value, unless it was deemed an outlier. For evaluation of potential outliers, statistical tests and expert analyst judgment were used after viewing both normal and log-normal plots of the data. This judgment utilized knowledge of potential coeluters based on the laboratory's reported methods. In instances for which the analyte concentration was below the detection limit of most participating laboratories, no exercise assigned value was calculated. In data sets where a number of laboratories report results as "not detected" at various detection limits, there is no consensus as to what numerical value should be assigned to these results in the computation of consensus means and other values.

Reported Results

Laboratories were assigned numerical identification codes in order of receipt of data with the exception of the two NIST laboratories which are Lab 1 and 32 in this exercise. The laboratory mean replicate data are shown in Tables 1 to 3 for QA10SED01. Included in the means tables are the exercise assigned mean values and the standard deviation of the assigned mean values along with the exercise assigned median values. Summaries of the methods used by each laboratory are in Appendix B, and notes included by a laboratory with its data are listed in Appendix C. In Appendix D, charts of the mean numerical results reported by each laboratory for each analyte are shown for the exercise material and the corresponding reference material, SRM 1941b.

Performance Scores

The exercise coordinators recognize that different environmental monitoring programs have different data quality objectives and needs. The acceptability of the results submitted by a particular laboratory will be decided by the individual program(s) for which the laboratory provides data. Typically, each program will use these exercise results in conjunction with the laboratory's performance in the analysis of certified reference materials and/or control materials, and of other quality assurance samples. These exercise results are exhibited in a number of ways in this report to facilitate their use by most environmental monitoring programs in their acceptability assessments.

IUPAC guidelines describe the use of z-scores and p-scores for assessment of accuracy and precision in intercomparison exercises such as those described in this report. These indices assess the difference between the result of the laboratory and the exercise assigned value and can be used to compare the performance of different laboratories among the participants on different analytes and on different materials.

Accuracy Assessment (z-score)

$$z\text{-score} = (\text{bias estimate})/(\text{performance criterion}) = (x - X)/\sigma$$

where x is the individual laboratory result, X is the "Exercise Assigned Value," and σ is the target value for standard deviation.

As described in the IUPAC guidelines, the choice of σ is dependent upon data quality objectives of a particular program. It can be "fixed" and arrived at by perception, prescription, or reference to validated methodology (e.g., $\sigma = 0.025 X$; X is the exercise assigned value,), or it can be an estimate of the actual variation (e.g., the calculated sample standard deviation, s , from the exercise data). The "fixed" performance criterion is more useful in the comparison of a laboratory's performance on different materials while the use of the actual variation may be more useful within a given exercise, for example, if the determination of a particular analyte is exceptionally problematic. The measurement of analytes in this study is not particularly problematic.

We have calculated and reported z-scores using the fixed performance criterion for each analyte for each laboratory using "25 % of the exercise assigned value" as the fixed target value for standard deviation for this program. The use of z-score (25 % X) is also taken from the the NOAA Mussel Watch and National Status and Trends Quality Assurance Programs. The z-scores calculated for these exercises can thus be interpreted as shown in the following examples:

z-score (25 % X):

- +1 \Rightarrow laboratory result is 25 % higher than the assigned value
- 2 \Rightarrow laboratory result is 50 % lower than the assigned value.

From a scientific point of view, IUPAC does not recommend the classification of z-scores but allows that a common classification is:

$ z \leq 2$	Satisfactory
$2 < z < 3$	Questionable
$ z \geq 3$	Unsatisfactory.

This classification has been deemed acceptable within the measurement community.

Tables 4 through 6 summarize the z-scores (25 %) for each laboratory for each reported analyte in QA10SED01.

In addition, Tables 7 through 9 summarize the percent differences from the consensus values with color coding to reflect laboratories using similar extraction methods, and Tables 10 through 12 summarize the percent differences from the consensus values with color coding to reflect the differences in use of surrogates, internal standards, and recovery corrections among the laboratories.

Precision Assessment (p-score)

$$p\text{-score} = \sigma_{\text{lab}} / \sigma_{\text{target}}$$

For the calculation of p-scores for this program, the σ values used are coefficients of variation (CV calculated as relative standard deviations) with the current target σ (CV) for the three replicates being

15 %. Tables 13 through 15 summarize the relative standard deviations (RSDs) calculated from the three concentrations reported by the laboratory for each analyte quantified while Tables 16 through 18 summarize the p-scores (15%).

DISCUSSION

NOAA's NRDA office solicited laboratories involved in the analysis of samples shortly after the DWH disaster for their interest in participating in this interlaboratory study for analytes of interest in sediment. The participation by the laboratories was voluntary, and samples of QA10SED01 were provided free of charge. Laboratories were provided with information for ordering SRM 1941b (See Appendix A). Interested laboratories were requested to quantify selected PAHs, alkylated PAHs (some individual and some as groups), and biomarkers (hopanes and steranes) in three aliquots of QA10SED01 and SRM 1941b using their laboratories' analytical protocols for these analyses. A total of 40 laboratories received samples of which 33 laboratories submitted data. The 33 participating laboratories are listed in alphabetical order in Appendix E. One laboratory (33) submitted data using two analytical methods. The results using gas chromatography with mass spectrometric detection (GC/MS) are reported in the data tables and shown in Appendix D while the data for the PAHs quantified using GC/MS/MS are reported in the notes (Appendix C) but not used in the calculation of the consensus values.

Tables 1 through 3 summarize the laboratory means and exercise assigned values for the PAHs, alkylated PAHs, and biomarkers (hopanes and steranes), respectively. The consensus value for a given compound in QA10SED01 was derived by combining data where corresponding values in SRM 1941b were within 30% of the expanded uncertainty of the SRM value. In the absence of a corresponding SRM value, individual results were screened using outlier tests and included in the consensus value if values were shown not to be statistical outliers. Appendix D contains the charts of the QA10SED01 and SRM 1941b data by analyte. In these charts, the analytes that are not included on the Certificate of Analysis for SRM 1941b are shown with no target value. A number of laboratories are reporting values below the certified and reference values for the analytes in SRM 1941b. So as not to eliminate too many data points in the calculation of the exercise assigned values for QA10SED01, a less stringent criterion of 50%, as opposed to 30%, below the confidence interval for the SRM data was used for screening the data for the majority of the analytes. However, the two NIST data sets (Lab 1 and Lab 32) as well as data from some laboratories that have participated in previous sediment interlaboratory studies as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment agreed with the certified and reference concentrations for the majority of the analytes characterized in SRM 1941b thus suggesting some issues with data from laboratories that failed to report agreement with the certified and reference values for SRM 1941b.

In an effort to determine what could be causing the differences, the laboratory's % difference from the exercise assigned values for QA10SED01 was color coded based on extraction method (Tables 7, 8, and 9 for PAHs, alkyl PAHs, and biomarkers, respectively) and based on quantitation method (Tables 10, 11, and 12 for PAHs, alkyl PAHs, and biomarkers, respectively). No general statements can be made about the extraction method, other than it was noted that the one laboratory that used QuEChERS as an extraction method reported low values for all of the analytes that it reported. With only one laboratory using this method, it is not possible to determine if the low result by the QuEChERS method was method- or lab-related. Similarly, no general statement can be made on the use of surrogates

versus internal standards and recovery correcting versus not recovery correcting in relationship to agreement with the consensus value.

The spread in the PAH data for QA10SED01 among the laboratories is highest for naphthalene, acenaphthylene, benzo[*b*]fluorene, benzo[*j*]fluoranthene, cis/trans decalin, benzothiophene, and naphthobenzothiophene. The alkylated PAH data show even more spread among the laboratories, particularly for the C1 to C4 phenanthrenes, C1 to C4 fluoranthenes, and C1 to C4 naphthothiophenes. It is interesting to note that for the laboratories who reported 1-methylnaphthalene and 2-methylnaphthalene as well as C1-naphthalenes, generally the reported values for C1-naphthalenes were lower than the sum of the 1-methyl- and 2-methylnaphthalene. Fewer laboratories reported data for the selected biomarkers with the largest spread in the data seen for 17 α (H), 21 β (H)-30-norhopane and 17 α , 21 β (H)-hopane. Laboratory 29 (see notes in Appendix C) pointed out some possible nomenclature issues for the hopanes which may have caused confusion. These issues will be clarified in future studies.

The majority of the z-scores based on 25% (Tables 4 through 6) are within ± 2 while the majority of the p-scores based on 15% (Tables 16 through 18) are within ± 1 . This indicates that the laboratories are internally consistent, but there is still a fair amount of spread among the laboratories.

It is important to evaluate the non-quantitative results reported by each laboratory as well. Although these results are not easily presented or numerically evaluated, they are included in Tables 1 through 3 of this report. The laboratory and its data users should closely examine these non-quantitative results. Decisions based on false negative or false positive results from a laboratory can lead to significant environmental and/or economic consequences. Some laboratories reported detection limits in this sediment material that may be too high for the data quality objectives and needs of their program(s), and these issues should be assessed as well.

Intercomparison exercises provide an important mechanism for assessing the comparability, accuracy, precision, and reproducibility of data being produced by the participating laboratories. Exercise materials similar in matrix, form, and analyte concentration to typical samples routinely analyzed by the laboratories are most useful for demonstrating the level of comparability and for revealing potential problem areas.

Minimizing the among-laboratory biases so that the analytical variability is significantly less than the field sampling variability should be an achievable goal in environmental monitoring.

Acknowledgments

The time and effort of the analysts and management of the participating laboratories and the assistance of the NIST Standard Reference Materials Program with the procurement and preparation of the exercise material are gratefully acknowledged.

Disclaimer

Certain commercial equipment, instruments, or materials are identified in this report to specify adequately the experimental procedure. Such identification does not imply recommendation or

endorsement by the National Institute of Standards and Technology, nor does it imply that the materials or equipment identified are the best available for the purpose.

References

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3. Schantz, M.M., Parris, R.M., and Wise, S.A., NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment: Description and Results of 2007 Organic Intercomparison Exercises, NISTIR 7501, Gaithersburg, MD (2008).

Table 1. Marine Sediment (QA10SE01): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs (reported as if three figures were significant)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	47.4	47.9	48.7	45.4	45.0	48.6	47.7	47.8	47.7	47.6	37.3	48.8	49.4	47.3	46.4	48.0	46.2
TOC (%)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ng/g dry mass																	
Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
naphthalene	497	4118	<4000	357	252	489	386	105	590	121	52.0	185	274	206	207	429	119
biphenyl	102	100	NA	<100	147	95.1	33.0	126	44.8	45.2	97.4	62.1	73.7	144	82.3	52.0	
acenaphthene	65.7	71.4	<4000	<371	<100	59.0	66.1	31.2	74.5	43.3	24.4	46.2	37.7	43.4	116	61.9	42.2
acenaphthylene	243	254	<4000	<371	351	85.4	169	195	356	237	257	238	53.0	152	675	314	289
fluorene	89.4	83.5	<4000	<371	<100	137	108	43.6	158	52.1	29.9	56.1	54.9	80.1	141	84.3	40.7
phenanthrene	1546	1608	1487	1249	1353	1377	1140	817	1573	873	773	1200	842	983	1427	1143	898
anthracene	457	398	<4000	276	547	282	246	243	495	264	296	416	331	235	550	430	315
fluoranthene	4148	4167	3227	3650	4510	3083	4070	3347	4930	3140	2363	4423	2240	3143	6000	3390	3030
pyrene	3520	3387	3067	3087	3633	3217	3523	2580	3800	2740	2577	3483	1943	2377	4710	2873	2397
benzo[b]fluorene	NA	NA	NA	NA	NA	NA	134	94.7	NA	NA	NA	NA	NA	134	113	206	NA
benzo[a]anthracene	1369	1175	918	1085	1477	1077	1290	1103	1333	1044	988	1290	1198	995	2147	1012	1053
chrysene	2695	1650	1793	2270	2710	1460	1660	1680	1583	2407	1172				2420		1790
triphenylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
chrysene/triphenylene	2513					2113									1650		1953
benzo[b]fluoranthene	1923	1641	1150	2210	2313	2257		1707	1813	1530	1062	1765	1024	1810	2113	1573	1617
benzo[j]fluoranthene	829	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
benzo[k]fluoranthene	841	1629	<4000	702	2063	984	731	1450	978	1343	1173	1457	662		1800		1583
benzo[a]fluoranthene	205	NA	NA	NA	NA	NA	198	NA	NA	NA	NA	NA	NA	193	NA	NA	NA
benzo[b+j]fluoranthene							2287										
benzo[a+k]fluoranthene															1407		1460
benzo[a+b+j+k]fluoranthene																	
benzo[a+b]fluoranthene	1742	1898	NA	1867	1837	1483	1200	1477	1203	1233	1343	853	1283	1403	1353	1377	
benzo[a]pyrene	1005	1046	<4000	790	1443	929	869	840	923	770	621	814	549	666	1260	816	637
perylene	402	369	NA	449	396	304	272	371	296	232	264	210	274	266	349	275	
indeno[1,2,3-cd]pyrene	1208	1217	<4000	965	1793	1210	1133	1043	1243	880	697	944	1087	1083	299	1157	505
benzo[ghi]perylene	1305	1468	<4000	1080	1860	1237	1210	1200	1397	1037	749	1078	623	1093	261	1210	496
dibenz[a,h]anthracene	310	296	<4000	337	1137	371	278	349	199	285	<5	297	163	435	108	309	205
dibenz[a,h-]anthracene	NA	NA	NA	NA	NA	NA	10.8	NA	8.71	NA	29.4						
cis/trans-decalin	NA	NA	<4000	155	NA	230	177	57.8	NA	69.0	45.1	111	114	105	153	157	75.2
dibenzo[fur	NA	NA	NA	NA	NA	NA	352	NA	NA	NA	NA	NA	NA	677	NA	664	NA
retene	NA	NA	NA	NA	NA	NA	15.0	NA	NA	NA	NA	NA	NA	12.0	9.02	NA	15.6
benzothiophene	NA	NA	NA	NA	NA	NA	16.3	184	94.1	97.1	85	99.2	94.1	112	101	98.5	174
dibenzothiophene	NA	NA	NA	NA	NA	NA	380	NA	NA	NA	NA	NA	NA	289	NA	289	NA
naphthalenobenzothiophene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	207	NA	NA

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab; Bolded values were not used in the calculation of the consensus statistics

Table 1 (cont). Marine Sediment (QA10SE001): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs
(reported as if three figures were significant)

Percent Water	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29*	30	31	32	33	Consensus Values (%)		
TOC (%)		NA	48.2	48.5	48.1	48.0	47.4	48.5	47.9	48.5	48.0	49.8	52.2	52.8	47.3	48.1	48.4	47.8	2.4	48.0
		NA	NA	2.18				5.57	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.34	1.49	4.81
Consensus Values (ng/g dry mass)																				
naphthalene	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	mean	std dev	median
biphenyl		96.7	197	90.0	135	186	187	1181	501	549	63.8	ND	515	237	161	638	633	325	243	237
acenaphthene		34.3	86.0	16.7	42.7	45.9	<125	99.1	120	103	<83.5	NA	88.0	58.7	<94.8	113	127	84.9	34.4	88.0
acenaphthylene		32.3	60.7	DL	30.9	29.8	337	61.8	74.3	67.2	<83.5	6.30	66.8	35.0	<94.8	69.9	76.6	55.5	21.0	60.7
acenaphthylcne		200	459	102	227	234	549	143	390	70.0	48.0	270	88.3	519	86.3	199	241	156	234	
fluorene		42.5	59.6	16.8	65.7	57.9	272	98.6	128	91.5	30.6	22.0	85.6	65.3	112	133	110	80.8	37.2	81.8
phenanthrene		710	1417	402	972	1143	781	1219	1497	1587	69.2	595	1547	1013	1080	1752	1587	1160	350	1143
anthracene		206	583	104	739	297	<125	310	576	473	134	91.9	379	207	552	374	546	366	158	331
fluoranthene		2577	4557	1463	4311	3860	2350	2826	4129	4277	2057	2463	4690	2533	3560	4238	4660	3623	941	3605
pyrene		2037	3767	1294	3108	4437	1803	2381	3310	3743	1683	2017	4060	1967	3730	3479	3837	3071	793	3163
benzo[b]fluorene		NA	NA	303	NA	NA	534	NA	91.2	NA	NA	NA	NA	136	NA	110	NA	132	181	133
benz[a]anthracene		777	1260	443	2455	1333	925	819	2348	1357	616	663	1320	787	1300	1424	1500	1232	425	1187
chrysene		1270	2623	315	2113	2427	864			1087	1437		1500		NA		1839	559	1680	
triphenylene		NA	NA	310		1713	NA			NA	NA		NA		NA		No target	No target	No target	
chrysene[triphenylene]			2188					2954	2503			2303		1820		2873	2287	430	2287	
benzo[b]fluoranthene		1223	3080	512	1508	1500	1687	1196	2364	1990		989	1833	1567		1825	2010	1734	464	1707
benzo[j]fluoranthene		NA	NA	454	NA		2270	NA			NA	NA	NA	903		NA	1114	795	866	
benzo[k]fluoranthene		994	1019	328	629	1303	1917	524			904	467	739	827		NA	1113	454	989	
benzo[a]fluoranthene		NA	NA	247	NA		NA	NA	224		NA	194	NA	205		NA	212	20	205	
benzo[b,j]fluoranthene									1035	1720		1587				2419	1605	461	1523	
benzo[j,k]fluoranthene										1640							No target	No target	No target	
benzo[a,b,j,k]fluoranthene											2070						270	88	296	
benzo[e]pyrene		1022	NA	814	1336	1037	1707	1046	1233	1737	694	NA	1550	920	1420	1470	1940	1361	338	1353
benzo[a]pyrene		609	991	95.8	1104	602	2697	688	904	1090	395	405	879	640	824	993	1133	841	240	822
perylene		206	NA	142	275	281	785	146	353	410	165	NA	331	243	261	421	473	301	89	278
indeno[1,2,3-cd]pyrene		1024	1403	1079	1227	482	2580	776	1137	1277	395	463	1106	843	680	1082	1443	996	335	1082
benzo[ghi]perylene		928	1360	675	1497	527	2180	943	925	1357	441	419	1233	857	926	1419	1520	1078	427	1087
dibenz[a,h]anthracene		218	395	DL	362	185	<125	156	303	338	150	148	315	223	<94.8	NA	356	No target	No target	
dibenz[a,h]anthracene																	1361	338	1353	
cis/trans-decalin		NA	NA	DL	NA		<125	NA	<2.6	NA	<83.5	NA	13.6	NA	<94.8	NA	DL	15.6	9.4	12.2
dibenzofuran		NA	110	37.1	NA	96.0	<125	NA	212	NA	38.1	NA	160	98.3	104	NA	261	122	62	110
retene		NA	NA	DL	NA		<125	NA	147	631	292	NA	699	NA	1240	661.32	833	622	308	663
benzothiophene		NA	NA	79.4	NA	14.00	NA	18.6	NA	<83.5	NA	20.4	NA	<94.8	NA	38.8	25.1	22.0	17.0	
dibenzothiophene		88.0	133	82.7	68.1	142	1247	131	126	171	72.0	NA	153	158	182	172	128	37	129	
naphthobenzothiophene		NA	NA	DL	NA	<125	NA	1260	NA	200	NA	686	NA	<94.8	NA	NA	504	412	335	

NA = Not analyzed; DL = Detection limit; No value in space=nothing reported by lab. Bolded values were not used in the calculation of the consensus statistics.

* Lab 29 originally reported % solids. Their % water was 47.8% std dev 0.5% (n=3). Lab 29 also reported TOC 5.17% std dev 0.14% after the initial data treatment.

Table 2. Marine Sediment (QA10SE001): Laboratory means of three replicates and exercise assigned values - Alkylated PAHs (ng/g dry mass)

	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	119	133	<100	129	109	38.4	121	40.5	52.4	62.2	72.7	73.2	86.8	120	43.6			
2-methylnaphthalene	321	295	<4000	220	194	305	241	82.9	291	87.1	48.8	159	514	189	176	290	84.6	
2,6-dimethylnaphthalene	257	NA	NA	278	225	78.3	149	100	61.6	155	NA	187	139	202	100			
2,6,2',7-dimethylnaphthalene																		
1,6,7-trimethylnaphthalene	NA	NA	NA	182	176	81.9	NA	102	74.0	99.0	NA	108	NA	149	113			
1-methylnaphthalene	308	NA	NA	252	263	229	366	173	261	175	225	267	266	308	139			
C1-decalins	NA	NA	NA	NA	NA	29.3	NA	NA	NA	NA	NA	18.1	NA	28.5	NA			
C2-decalins	NA	NA	NA	NA	NA	59.0	NA	NA	NA	NA	NA	66.2	NA	54.8	NA			
C3-decalins	NA	NA	NA	NA	NA	102	NA	NA	NA	NA	NA	70.9	NA	41.5	NA			
C4-decalins	NA	NA	NA	NA	NA	101	NA	NA	NA	NA	NA	163	NA	93.1	NA			
C1-naphthalenes	424	NA	170	NA	237	60.3	413	72.5	70.8	128	NA	156	123	248	128			
C2-naphthalenes	761	NA	267	NA	367	150	453	152	117	454	398	294	275	290	187			
C3-naphthalenes	1208	NA	478	NA	660	252	623	329	243	750	611	581	616	472	407			
C4-naphthalenes	1593	NA	732	NA	1047	397	583	609	496	657	NA	931	908	695	696			
C1-benzothiophenes	NA	NA	NA	NA	NA	16.3	NA	NA	NA	NA	NA	NA	48.7	NA	42.1	NA		
C2-benzothiophenes	NA	NA	NA	NA	NA	22.7	NA	NA	NA	NA	NA	30.4	NA	41.4	NA			
C3-benzothiophenes	NA	NA	NA	NA	NA	31.0	NA	NA	NA	NA	NA	52.5	NA	48.6	NA			
C4-benzothiophenes	NA	NA	NA	NA	NA	72.0	NA	NA	NA	NA	NA	141	NA	49.3	NA			
Cl-fluorenes	356	NA	2480	NA	133	78.6	202	215	161	229	NA	132	241	129	inf			
C2-fluorenes	582	NA	2373	NA	370	136	363	431	146	216	NA	454	979	467	inf			
C3-fluorenes	2140	NA	744	NA	707	1022	293	1297	912	686	NA	1227	2093	1450	1130			
Cl-phenanthrenes/anthracenes	2309	NA	1497	NA	1633	940	2150	893	817	923	2053	1120	1450	1220	917			
C2-phenanthrenes/anthracenes	3288	NA	2667	NA	2667	1480	3127	1860	1237	1760	2540	1993	2690	1950	2027			
C3-phenanthrenes/anthracenes	2643	NA	2607	NA	1900	1074	2017	1657	974	1760	NA	1637	2577	1527	1613			
C4-phenanthrenes/anthracenes	891	NA	1890	NA	1167	695	581	1447	949	933	NA	849	1294	773	1000			
C1-dibenzothiophenes	405	NA	333	NA	300	176	436	311	213	388	NA	330	320	397	245			
C2-dibenzothiophenes	1020	NA	888	NA	960	443	986	662	601	842	NA	826	783	963	624			
C3-dibenzothiophenes	1027	NA	569	NA	1133	499	708	728	726	883	NA	846	834	964	649			
C4-dibenzothiophenes	563	NA	314	NA	513	287	215	652	563	725	NA	476	580	538	420			
Cl-fluoranthenes/pyrenes	2474	NA	2480	NA	1433	1217	1907	1563	818	1340	1020	1303	2643	1573	1500			
C2-fluoranthenes/pyrenes	2561	NA	2373	NA	1027	1343	831	1660	913	1550	NA	1190	2807	1633	1637			
C3-fluoranthenes/pyrenes	1317	NA	744	NA	610	546	292	966	857	778	NA	606	1188	906	827			
C4-fluoranthenes/pyrenes	878	NA	NA	NA	443	NA	132	NA	NA	NA	NA	513	<6.6	NA	NA			
C1-naphthobenzothiophenes	NA	NA	NA	NA	613	NA	NA	NA	NA	NA	NA	618	NA	332	NA			
C2-naphthobenzothiophenes	NA	NA	NA	NA	677	NA	NA	NA	NA	NA	NA	646	NA	353	NA			
C3-naphthobenzothiophenes	NA	NA	NA	NA	597	NA	NA	NA	NA	NA	NA	458	NA	279	NA			
C4-naphthobenzothiophenes	NA	NA	NA	NA	347	NA	NA	NA	NA	NA	NA	289	NA	127	NA			
Cl-B[a]A/chrysenes	1827	NA	1407	NA	1533	836	1253	1138	1223	1224	NA	1237	1727	1163	1463			
C2-B[a]A/chrysenes	1368	NA	1140	NA	1133	618	786	848	765	746	NA	738	1197	827	993			
C3-B[a]A/chrysenes	599	NA	604	NA	693	285	277	576	505	582	NA	580	<6.6	592	512			
C4-B[a]A/chrysenes	311	NA	NA	NA	317	192	37.5	1150	<5	248	NA	449	<6.6	322	277			

NA = Not analyzed; DL = Detection limit; No value in space = nothing reported by lab. Bolded values were not used in the calculation of the consensus statistics

Table 2 (cont). Marine Sediment (QA10SE01): Laboratory means of three replicates and exercise assigned values - Alkylated PAHs (mg/g dry mass)
(reported as if three figures were significant)

	Laboratory No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Consensus Values (ng/g dry mass)	
		mean	std dev	median													mean	
1-methylnaphthalene	18	31.5	74.6	DL	44.0	42.1	<125	270	130	103	<83.5	ND	119	68.3	<94.8	110	192	
2-methylnaphthalene	69.4	173	66.9	99.7	123	<125	694	341	319	36.7	ND	311	150	131	295	446	95.4	
2,6-dimethylnaphthalene	NA	183	71.2	121	110	<125	521	279	260	38.8	NA	190	115	136	123	NA	54.0	
2,6,7,7-dimethylnaphthalene	NA	NA	59.9	75.5	NA	203	89.5	NA	57.6	NA	76.3	118	124	NA	210	117	86.8	
1,6,7-trimethylnaphthalene	NA	342	140	227	146	243	226	313	105	249	243	400	NA	381	250	77	249	
1-methylphenanthrene	NA	NA	DL	NA	NA	NA	<5.2	NA	<835	NA	27.0	NA	17300	NA	NA	25.7	5.2	
C1-decalins	NA	NA	DL	NA	NA	NA	21.9	NA	<835	NA	49.6	NA	<94.8	NA	NA	50.3	17.0	
C2-decalins	NA	NA	DL	NA	NA	NA	33.8	NA	<835	NA	36.5	NA	<94.8	NA	NA	NA	54.8	
C3-decalins	NA	NA	DL	NA	NA	NA	47.0	NA	NA	NA	85.0	NA	<94.8	NA	NA	NA	57.0	
C4-decalins	NA	153	69.9	NA	94.0	<125	NA	305	422	<835	NA	278	133	266	NA	NA	97.8	41.9
Cl-naphthalenes	60.4	274	95.3	NA	121	1683	984	416	775	<835	NA	293	200	439	NA	NA	93.1	93.1
C2-naphthalenes	124	230	502	310	NA	299	<125	1511	550	1223	<835	NA	518	337	1160	NA	NA	27.7
C3-naphthalenes	404	468	76.3	NA	419	<125	2089	905	1600	<835	NA	797	500	684	NA	NA	205	205
C4-naphthalenes	NA	54.7	NA	NA	<125	NA	36.1	NA	<835	NA	51.3	NA	<94.8	NA	NA	NA	130	205
C1-benzothiophenes	NA	NA	DL	NA	1600	NA	35.5	NA	<835	NA	36.3	NA	260	NA	NA	NA	NA	249
C2-benzothiophenes	NA	NA	DL	NA	<125	NA	26.1	NA	<835	NA	69.9	NA	349	NA	NA	NA	NA	135
C3-benzothiophenes	NA	NA	DL	NA	NA	NA	52.4	NA	NA	NA	110	NA	<94.8	NA	NA	NA	NA	135
C4-benzothiophenes	NA	48.9	458	165	NA	<125	129	160	364	<835	NA	107	81.7	591	NA	NA	435	205
Cl-fluorenes	137	449	35.0	NA	306	50.5	920	557	920	<835	NA	557	313	467	NA	NA	397	239
C2-fluorenes	730	1078	91.7	NA	938	<125	1340	2071	3277	<835	NA	1383	213	1050	NA	NA	1640	239
C3-fluorenes	465	1343	448	NA	499	184	1250	1581	2323	366	NA	1710	1200	2790	NA	NA	1640	1078
Cl-phenanthrenes/anthracenes	1179	2940	1090	NA	2230	<125	2088	2806	3500	1467	NA	2720	2100	1710	NA	NA	2707	1078
C2-phenanthrenes/anthracenes	1054	1953	530	NA	1607	<125	1806	2190	3107	1293	NA	1940	1800	1100	NA	NA	2707	1078
C3-phenanthrenes/anthracenes	582	594	430	NA	671	NA	834	1388	4877	401	NA	1033	967	664	NA	NA	3200	1078
C4-phenanthrenes/anthracenes	130	410	142	NA	304	<125	360	301	577	<835	NA	470	330	356	NA	NA	531	1078
Cl-dibenzothiophenes	360	1073	260	NA	735	NA	886	926	2047	538	NA	1117	807	693	NA	NA	1176	1078
C2-dibenzothiophenes	392	901	230	NA	869	NA	867	1084	2077	NA	1142	863	996	NA	NA	1450	205	
C4-dibenzothiophenes	297	<150	424	NA	NA	NA	555	1096	<835	NA	677	493	372	NA	NA	895	205	
Cl-fluoranthenes/pyrenes	750	1930	1098	NA	2400	156	1654	1871	5457	1014	NA	2143	1200	2800	NA	NA	2113	1078
C2-fluoranthenes/pyrenes	846	2190	382	NA	1750	NA	1963	1963	5777	1056	NA	2153	710	1830	NA	NA	2233	1078
C3-fluoranthenes/pyrenes	525	NA	313	NA	667	<125	NA	1081	2697	641	NA	1430	360	923	NA	NA	1176	1078
C4-fluoranthenes/pyrenes	NA	432	189	NA	671	<125	NA	869	1337	NA	NA	1230	163	1220	NA	NA	1457	205
Cl-fluoranthenes/pyrenes	NA	NA	DL	NA	NA	NA	1236	NA	314	NA	728	NA	387	NA	NA	NA	604	205
Cl-naphthalene/anthracenes	NA	NA	DL	NA	NA	NA	1333	NA	<835	NA	934	NA	368	NA	NA	NA	719	205
C2-naphthalene/anthracenes	NA	NA	DL	NA	NA	NA	876	NA	<835	NA	800	NA	2110	NA	NA	NA	853	205
C3-naphthalene/anthracenes	NA	NA	DL	NA	NA	NA	403	NA	NA	NA	489	NA	198	NA	NA	NA	853	205
Cl-naphthalene/anthracenes	788	1867	704	NA	1380	1167	876	1790	1950	799	NA	1433	977	1780	NA	NA	2003	205
C2-B[a]A/anthracenes	527	973	695	NA	898	<125	715	1328	1640	482	NA	1121	677	1220	NA	NA	1517	205
C3-B[a]A/anthracenes	305	572	DL	NA	NA	39.1	717	400	<835	NA	852	350	713	NA	NA	NA	543	205
C4-B[a]A/anthracenes	NA	297	DL	NA	<125	105	310	187	<835	NA	475	106	169	NA	NA	NA	282	205

NA = Not analyzed; DL=Detection limit; No value in space=nothing reported by lab. Bolded values were not used in the calculation of the consensus statistics

Table 3. Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Biomarkers (ng/g dry mass) (reported as if three figures were significant)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole	NA	NA	<4000	NA	274	108	NA	NA	NA	NA	NA	NA	109	NA	NA	NA	NA
<i>17α(H)-22,29,30-Tisnorhopane</i>	828	NA	889	NA	457	751	541	447	328	NA	NA	NA	508	358	610		
<i>17α(H)-21β(H)-30-Norhopane</i>	1209	NA	2693	NA	1517	1740	1610	1357	980	NA	NA	NA	981	1120	1793		
<i>17α(H)-21β(H)-Hopane</i>	2251	NA	3700	NA	2703	2280	2350	2210	2093	1493	NA	1963	1016	1520	2357		
<i>20α 20R-Cholestane</i>	670	NA	1497	NA	824	237	744	<5	653	NA	NA	NA	789	553	933		
<i>20β 20R-Cholestane</i>	291	NA	549	NA	464	407	422	340	220	NA	NA	NA	539	295	448		
<i>20β 20R-24S-Methylcholestane</i>	341	NA	478	NA	414	276	376	310	219	NA	NA	NA	379	287	457		
<i>20α 20R-24R-Ethylcholestane</i>	363	NA	441	NA	455	348	419	310	309	NA	NA	NA	249	303	399		
<i>20β 20R-24R-Ethylcholestane</i>	465	NA	723	NA	529	459	579	321	332	NA	NA	NA	669	479	856		
<i>17α(H)-21β(H)-22R-Homohopane</i>	494	NA	794	NA	491	618	540	375	367	NA	NA	NA	151	409	537		
<i>17α(H)-21β(H)-22S-Homohopane</i>	791	NA	NA	704	773	712	547	524	NA	NA	NA	214	559	828			

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab; Bolded values were not used in the calculation of the consensus statistics

Table 3 (cont). Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Biomarkers (ng/g dry mass) (reported as if three figures were significant)

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Consensus Values (ng/g dry mass)
																	mean
																	std dev
Carbazole	NA	140	65.2	NA	296	NA	NA	117	NA	150	NA	192	NA	NA	NA	NA	161
<i>17α(H)-22,29,30-Tisnorhopane</i>	354	NA	506	NA	433	<1.25	NA	875	NA	574	NA	NA	NA	NA	NA	NA	564
<i>17α(H)-21β(H)-30-Norhopane</i>	1056	NA	NA	NA	1177	NA	NA	2514	NA	1840	NA	2400	NA	NA	NA	NA	1599
<i>17α(H)-21β(H)-Hopane</i>	1510	NA	2458	NA	1473	894	NA	NA	2561	NA	2480	NA	NA	NA	NA	NA	2073
<i>20α 20R-Cholestane</i>	534	NA	DL	NA	<1.25	NA	NA	277	NA	722	NA	NA	NA	NA	NA	NA	703
<i>20β 20R-Cholestane</i>	285	NA	NA	396	NA	NA	310	NA	337	NA	NA	NA	NA	NA	NA	NA	379
<i>20β 20S-Methylcholestane</i>	258	NA	1448	NA	265	NA	NA	367	NA	NA	NA	NA	NA	NA	NA	NA	342
<i>20α 20R-24S-Ethylcholestane</i>	253	NA	373	NA	315	<1.25	NA	NA	354	NA	369	NA	NA	NA	NA	NA	351
<i>20β 20R-24R-Ethylcholestane</i>	331	NA	NA	390	NA	NA	NA	463	NA	609	NA	NA	NA	NA	NA	NA	354
<i>17α(H)-21β(H)-22R-Homohopane</i>	347	NA	NA	295	NA	NA	NA	1022	NA	708	NA	NA	NA	NA	NA	NA	511
<i>17α(H)-21β(H)-22S-Homohopane</i>	494	NA	NA	429	NA	NA	NA	1256	NA	826	NA	NA	NA	NA	NA	NA	666

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab; Bolded values were not used in the calculation of the consensus statistics

Table 4. Marine Sediment (QA10SED10): z-scores (25%) - Water, TOC, and PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Percent Water	-0.03	0.01	0.08	-0.20	-0.24	0.07	-0.01	0.00	-0.01	-0.01	-0.88	0.09	0.14	-0.04	-0.12	0.02	-0.14	
TOC (%)																		
phenanthrene	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	
naphthalene	2.11	1.14	0.39	-0.90	2.01	0.75	-2.70	3.26	-2.51	-3.16	-1.73	-0.63	-1.46	-1.45	1.28	-2.54		
biphenyl	0.82	0.70			2.94	0.48	-2.44	1.93	-1.89	-1.87	0.59	-1.08	-0.53	2.77	-0.12	-1.55		
acenaphthene	0.73	1.14			0.25	0.76	-1.75	1.37	-0.88	-2.24	-0.67	-1.29	-0.87	4.38	0.46	-0.96		
acenaphthylene	0.02	-3.38			1.83	-2.58	-1.20	-0.76	1.90	-0.07	0.27	-0.05	-3.12	-1.48	7.19	1.21	0.79	
fluoranthene	0.43	0.13			2.80	1.33	-1.84	3.83	-1.42	-2.52	-1.22	-1.28	-0.03	3.00	0.17	-1.99		
phenanthrene	1.33	1.54	1.13	0.31	0.67	0.75	-0.07	-1.18	1.43	-0.99	-1.33	0.14	-1.10	-0.61	0.92	-0.06	-0.90	
anthracene	0.99	0.35			-0.99	1.97	-0.92	-1.31	-1.34	1.41	-1.11	-0.76	0.54	-0.38	-1.44	2.01	0.70	0.56
fluoranthene	0.58	0.60	-0.44	0.03	0.98	-0.60	0.49	-0.31	1.44	-0.53	-1.39	0.88	-1.53	-0.53	2.62	-0.26	-0.66	
pyrene	0.59	0.41	-0.01	0.02	0.73	0.19	0.59	-0.64	0.95	-0.43	-0.64	0.54	-1.47	-0.90	2.13	-0.26	0.88	
benzofluorone						-1.03	-1.90						-1.04	-1.49	0.55			
benz[a]anthracene	0.44	-0.19	-1.02	-0.48	0.79	-0.51	0.19	-0.42	0.33	-0.61	-0.79	0.19	-0.11	-0.77	2.97	-0.72	-0.58	
chrysene	1.86	-0.41	-0.10	0.94	1.90	-0.82	-0.82	-0.39	-0.35	-0.56	1.24	-1.24	-1.45		1.26		-0.11	
triptycene																		
chrysene/triphenylene	0.40							-0.30										
benzol[b]fluoranthene	0.44	-0.21	-1.35	1.10	1.34	1.21	-0.06	0.18	-0.47	-1.55	0.07	-1.64	0.18	0.88	0.37	-0.27		
benzol[j]fluoranthene	-1.02																	
benzol[k]fluoranthene	-0.98	1.85		-1.48	3.41	-0.46	-1.37	1.21	-0.49	0.83	0.22	1.23	-1.62	0.00	2.47	1.69		
benzol[al]fluoranthene	-0.15						-0.28							-0.37				
benzol[b,j]fluoranthene														-0.49		-0.36		
benzol[a,b]fluoranthene																		
benzol[c]fluoranthene	1.12	1.58			1.48	1.40	0.36	-0.47	0.34	-0.46	-0.38	-0.05	-1.49	-0.23	0.12	-0.02	0.05	
benzol[d]fluoranthene	0.78	0.97		-0.25	2.86	0.42	0.13	-0.01	0.39	-0.34	-1.05	-0.13	-1.39	-0.83	1.99	-0.12	-0.97	
perylene	1.34	0.90		0.00	1.96	1.26	0.04	-0.38	0.92	-0.07	-0.92	-0.50	-1.21	-0.36	0.46	0.63	-0.35	
indeno[1,2,3- <i>cd</i>]perylene	0.85	0.89		-0.13	3.20	0.86	0.55	0.19	0.99	-0.47	-1.20	-0.21	0.36	0.35	-2.80	0.64	-1.97	
benzol[ghi]perylene	0.84	1.44		0.01	2.90	0.59	0.49	0.45	1.18	-0.15	-1.22	0.00	-1.69	0.06	-3.03	0.49	2.16	
dibenz[a,h]anthracene	0.61	0.39		1.01	12.87	1.50	0.13	1.18	-1.04	0.24	0.00	0.40	-1.58	2.45	-2.40	0.59	-0.95	
dibenz[a,h-c]anthracene																		
cis/trans-decalin								-1.24										
diketeno[<i>u</i> an								3.52	1.79	-2.11	-1.74	-2.52	-0.36	-0.25	-0.58	1.13	-1.54	
retene									-1.74									
benzo[b]phenene										-1.56					0.36			
dibenzothiophene	1.21	0.32			1.10	1.76	-1.06	-0.97	1.79	-0.90	-1.06	-0.51	-0.51	-2.09	2.56	-1.51		
naphthobenzothiophene										-0.98					-0.92	1.43	0.02	
															-1.71	-2.36		

Table 4 (cont). Marine Sediment (QA10SEDI0): z-scores (25%) - Water, TOC, and PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water	0.04	0.06	0.03	0.02	-0.03	0.06	0.01	0.06	0.02	0.17	0.37	0.42	-0.04	0.03	0.05	
TOC (%)	-2.00			1.13												
naphthalene	-2.81	-1.57	-2.89	-2.34	-1.71	-1.70	10.53	2.16	2.75	-3.22		2.34	-1.09	-2.02	3.86	4.03
biphenyl	-2.38	0.05	-3.21	-1.99	-1.84		0.67	1.67	0.83		0.15	-1.24		1.31	2.00	
acenaphthene	-1.68	0.37	-1.78	-1.85		20.24	0.45	1.35	0.84	-3.55	0.81		-1.48		1.04	1.51
acenaphthylene	-0.68	3.61	-2.32	-0.24	-0.1	5.10	-1.63	2.48	0.17	-2.84	-3.20	0.48	-2.54	4.61	-0.70	
fluorene	-1.90	-1.05	-3.17	-0.75	-1.13	9.46	0.89	2.35	0.53	-2.48	-2.91	0.24	-0.76	1.55	2.59	1.43
phenanthrene	-1.55	0.88	-2.61	-0.65	-0.06	-1.31	0.20	1.16	1.47	-1.61	-1.95	1.33	-0.51	-0.28	2.04	1.47
anthracene	-1.75	2.36	-2.86	-4.07	-0.75		-0.62	2.29	1.16	-2.54	-3.00	0.14	-1.74	2.03	0.99	1.97
fluoranthene	-1.16	1.03	-2.38	0.76	0.26	-1.41	-0.88	0.56	0.72	-1.73	-1.28	1.18	-1.20	-0.07	0.68	1.14
pyrene	-1.35	0.91	-2.31	0.05	1.78	-1.65	-0.90	0.31	0.88	-1.81	-1.37	1.29	-1.44	0.86	0.53	1.00
benzol[b]fluorene		2.70				7.82		-1.98				-0.99		-1.56		-1.08
benzol[a]anthracene	-1.48	0.09	-2.56	3.97	0.33	-1.00	-1.34	3.62	0.40	-2.00	-1.85	0.28	-1.45	0.22	0.62	0.87
chrysene	-1.24	1.71	-3.32		0.60	1.28	-2.12		-1.63	-0.87	-0.74					
triphenylene																
acenaphthylene		-0.17						1.17	0.38		0.03			-0.82		1.03
benzol[b]fluoranthene	-1.18	3.11	-2.82	-0.52	-0.54	-0.11	-1.24	1.45	0.59		-1.72	0.23	-0.39		0.21	0.64
benzol[j]fluoranthene		-2.37	0.00	0.00	0.00	4.15									-0.76	
benzol[k]fluoranthene	-0.43	-0.34	-2.82	-1.74	0.68	2.89	-2.12		0.21		-0.75		-2.32	-1.34	-1.03	
benzo[a]fluoranthene											-0.35			-0.14	0.42	
benzo[b]fluoranthene											-0.04				2.03	
benzo[a+b]fluoranthene																
benzo[e]pyrene	-1.00	-1.61	-0.67	-0.95	1.01	-0.93	-0.38	1.10	-1.96		0.55	-1.30	0.17	0.32	1.70	
benzo[f]pyrene	-1.10	0.71	-3.54	1.25	-1.14	8.82	-0.73	0.30	1.18	-2.12	-2.08	0.18	-0.96	-0.08	0.72	1.39
perylene	-1.26		-2.12	-0.35	-0.27	6.41	-2.07	0.69	1.44	-1.81	0.60	0.39	-0.77	-0.54	1.59	2.28
indenol[1,2,3-cd]pyrene	0.11	1.63	0.33	0.93	-2.06	6.36	-0.88	0.57	1.13	-2.42	-2.14	0.44	-0.61	-1.27	0.34	1.80
benzol[g]phenylene	-0.56	1.04	-1.50	1.55	-2.04	4.09	-0.50	-0.57	1.03	-2.36	-2.44	0.57	-0.82	-0.57	1.26	1.64
dbenzo[a,h]anthracene	-0.76	1.86	1.38	-1.25		-1.68	0.50	1.02	-1.78	-1.80	0.67	-0.69				
dbenzo[a,h]anthracene													-0.53			
cis/trans-decalin																
dbenzo[furan		-0.40	-2.78		-0.85			2.94		-2.75		1.24	-0.78	-0.59	4.55	
retene									-3.05	0.06	-2.12	0.50		3.98	0.25	1.49
benzothiophene		8.64				218.73		-1.04		0.00	-0.75					2.18
dbenzothiophene	-1.25	0.14	-1.42	-1.87	0.45	34.95	0.10	-1.34	-1.75	0.79	-1.02	0.94	1.68	1.38		
naphthobenzothiophene									6.01		-2.41		1.45			

Table 5. Marine Sediment (QA10SED10): z scores (25%) - Alkylated PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1-methylnaphthalene	0.99	1.59				1.39	0.58	-2.39	1.09	-2.30	-1.81	-1.39	-0.95	-0.93	-0.36	1.04	-2.17	
2-methylnaphthalene	1.70	1.23			-0.09	-0.55	1.41	0.28	-2.53	1.18	-2.45	-3.13	-1.17	5.13	-0.64	-0.87	1.15	-2.50
2,6-dimethylnaphthalene	2.05					2.55	1.30	-2.16	-0.50	-1.64	-2.55	-0.36	0.40	-0.73	0.75	-1.65		
1,6,7,7-dimethylnaphthalene						2.24	2.05	-1.19	0.00	-0.51	-1.46	-0.60	-0.30		1.10	-0.13		
1,6,7-trimethylnaphthalene						0.93	0.21	-0.33	1.86	-1.24	0.18	-1.19	-0.39	0.27	0.25	0.93	-1.77	
1-methylphenanthrene							0.56							-1.19			0.43	
C1-decalins							0.69								1.27			
C2-decalins																0.36		
C3-decalins															0.98			
C4-decalins																-1.09		
C1-naphthalenes	4.28					-0.69	0.62	-2.82	4.06	-2.58	-2.62	-1.50	-0.96	-1.59	0.85	-1.49		
C2-naphthalenes	3.34					-1.43	-0.47	-2.55	0.37	-2.54	-2.87	0.37	-0.17	-1.17	-1.35	-2.19		
C3-naphthalenes	3.57					-1.01	0.13	-2.42	-0.10	-1.94	-2.48	0.70	-0.17	-0.36	-0.14	-1.04	-1.45	
C4-naphthalenes	3.40					-0.60	0.87	-2.15	-1.29	-1.17	-1.70	-0.94	0.33	0.22	-0.77	-0.77		
C1-benzothiophenes							2.79							-0.41		-0.89		
C2-benzothiophenes															2.67	-0.19		
C3-benzothiophenes																1.51	-2.08	
C4-benzothiophenes																	-1.66	
C1-fluorenes	2.45					40.93	-1.19	-1.58	-2.58	-0.34	-0.11	-1.09	0.14	-1.60	0.37			
C2-fluorenes	1.49					18.39	-0.51	-2.71	-0.58	0.07	-2.63	-1.97	-0.28	5.24				
C3-fluorenes	3.16					-1.51	-1.64	-0.58	-3.02	0.34	-0.95	-1.70	0.10	3.00	0.85		-0.22	
C1-phenanthrones/anthracenes	2.90					0.47	0.88	-1.19	2.43	-1.33	-1.36	-1.24	2.14	-0.65	0.33	-0.35	-1.26	
C2-phenanthrones/anthracenes	1.72					0.64	0.64	-1.43	1.44	-0.76	-1.85	-0.94	0.42	-0.53	0.68	-0.61	-0.47	
C3-phenanthrones/anthracenes	1.73					1.65	0.12	0.37	-0.41	-1.89	-0.19	-0.45	-0.45	1.58	-0.69		-0.50	
C4-phenanthrones/anthracenes	-0.47					3.48	0.62	-1.25	-1.70	1.73	-0.24	-0.30	-0.64	1.12	-0.94		-0.04	
C1-dibenzofluorophenes	0.80					-0.05	-0.45	-1.92	1.17	-0.31	-1.48	0.60	-0.09	-0.21	0.70	-1.10		
C2-dibenzofluorophenes	0.84					0.22	0.56	-1.90	0.68	-0.86	-1.14	0.60	-0.08	-0.28	0.57	-1.04		
C3-dibenzofluorophenes	0.73					-1.38	1.22	-1.70	-0.74	-0.64	-0.66	0.07	-0.10	-0.16	0.44	-1.01		
C4-dibenzofluorophenes	0.23					-1.64	-0.15	-1.85	-2.38	0.90	0.23	1.44	-0.43	0.36	0.04	-0.85		
C1-fluoranthenes/phenes	1.90					1.92	-0.58	-1.10	0.55	-0.27	-2.05	-0.80	-1.57	-0.89	2.31	-0.25	-0.42	
C2-fluoranthenes/phenes	2.51					2.03	-1.39	-0.59	-1.89	0.22	-1.68	-0.06	-0.98	3.13	0.15	0.16		
C3-fluoranthenes/phenes	2.49					-0.33	-0.99	-1.31	-2.56	0.77	0.22	-0.16	-1.01	1.86	0.47	0.08		
C4-fluoranthenes/phenes	0.61						-1.67	-3.31						-1.30				
C1-naphthobenzothiophenes							0.06							0.09		-1.80		
C2-naphthobenzothiophenes							-0.23							-0.40		-2.03		
C3-naphthobenzothiophenes							-1.20							-1.85		-2.69		
C4-naphthobenzothiophenes							0.49							-2.06		-2.35		
C1-B[a]A-chrysenes	1.45					0.19	0.57	-1.51	-0.26	-0.61	-0.35	-0.31	1.15	-0.53	0.36			
C2-B[a]A-chrysenes	1.72					0.77	0.74	-1.41	-0.71	-0.45	-0.80	-0.91	1.01	-0.54	0.15			
C3-B[a]A-chrysenes	0.41					0.45	1.11	-1.90	-0.24	-0.28	-0.28	0.27	0.36	0.36	-0.23			
C4-B[a]A-chrysenes	0.41						0.49	-1.28	-3.47	12.30	-0.49	2.36	0.56	-0.07				

Table 5 (cont.). Marine Sediment (QAI) (SED10: z-scores (25%)-Alkylated PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	-2.68	-0.87	0.00	-2.16	-2.24		7.30	1.47	0.31	0.00	0.99	-1.14	0.00	0.61	4.03	
2-methylnaphthalene	-2.77	-0.93	-2.81	-2.23		-1.82		8.33	2.05	1.66	-3.35	1.53	-1.34	-1.67	1.25	
2,6-dimethylnaphthalene		0.31	-2.33	-1.16	-1.40		8.25	2.57	2.12	-3.09	0.46	-1.29	-0.80	-1.10	3.93	
2,6,7-dimethylnaphthalene																
1,6,7-trimethylnaphthalene																
1-methylphenanthrene	1.47		-1.94	-1.41				2.96	-0.93		-2.02	-1.38	0.06	0.26		3.22
Cl-1-decalins			-1.76	-0.36		-1.66	-0.11	-0.38	1.01	-2.32	-0.02	-0.11	-2.40	2.10		
Cl-2-decalins											0.19		2685.99			
Cl-3-decalins									-2.26		-0.06					
Cl-4-decalins									-1.63		-1.44					
Cl-5-decalins									-2.08		-0.52					
Cl-1-naphthalenes	-2.82	-1.02	-2.63		-2.16				1.96	4.23	1.42	-1.40	1.19			5.67
Cl-2-naphthalenes	-2.80	-1.36	-3.08		-2.84	12.23	5.49	0.01	3.47		-1.18	-2.07	0.23			3.76
Cl-3-naphthalenes	-2.56	-0.86	-2.06		-2.13		5.46	-0.55	3.66		-0.75	-1.89	3.27			5.11
Cl-4-naphthalenes	-2.12	-1.82	-3.65		-2.05		5.71	0.21	3.44		-0.30	-1.68	-0.82			7.62
Cl-1-benzothiophenes			0.04						-1.33		-0.21					5.60
Cl-2-benzothiophenes																
Cl-3-benzothiophenes																
Cl-4-benzothiophenes																
Cl-1-fluorenes	-3.11	4.29	-1.00					-1.67	-1.11	2.59			-2.06	-2.52	6.71	3.88
Cl-2-fluorenes	-2.70	0.23	-3.67					0.77	1.24	4.68			1.26	-1.04	0.40	-0.25
Cl-3-fluorenes	-1.56	-0.39	-3.69					-0.86	0.48	2.93	6.96		0.63	-3.29	-0.49	1.48
Cl-4-phenanthrenes/anthracenes	-2.61	0.02	-2.66		-2.51	-3.45		-0.26	0.73	2.95	-2.91		1.11	-0.41	4.34	4.09
Cl-2-phenanthrenes/anthracenes	-1.95	1.11	-2.10		-0.12		-0.37		0.88	2.09	-1.45		0.73	-0.35	-1.03	3.61
Cl-3-phenanthrenes/anthracenes	-1.72	0.23	-2.85		-0.52		-0.08		0.75	2.73	-1.20		0.20	-0.10	-1.62	4.51
Cl-4-phenanthrenes/anthracenes	-1.70	-1.65	-2.30		-1.34		-0.70		1.50	1.531	-2.41		0.09	-0.17	-1.37	8.67
Cl-1-dibenzothiophenes	-2.46	0.85	-2.32		-0.40		0.27		-0.43	2.83		1.57	-0.09	0.22		2.30
Cl-2-dibenzothiophenes	-2.29	1.09	-2.77		-0.51		0.21		0.40	5.72	-1.45		1.31	-0.17	-0.71	1.59
Cl-3-dibenzothiophenes	-2.20	0.15	-2.94		0.00		-0.01		0.99	5.25	-1.83		1.26	-0.02	2.68	
Cl-4-dibenzothiophenes	-1.77		-0.82						0.16	4.23			1.08	-0.30	-1.21	2.72
Cl-1-fluoranthenes/pyrenes	-2.21	0.60	-1.38		1.72	-3.63	-0.05		0.46	9.02	-1.58		1.11	-1.14	2.68	1.04
Cl-2-fluoranthenes/pyrenes	-1.85	1.56	-3.03		0.45				0.99	10.68	-1.32		1.47	-2.20	0.65	1.67
Cl-3-fluoranthenes/pyrenes	-1.41		-2.46		-0.71				1.33	9.30	-0.84		3.05	-2.22	0.55	3.18
Cl-4-fluoranthenes/pyrenes	-1.73		-3.01						-0.48	3.02			2.46	-3.14	2.41	5.58
Cl-1-naphthalen-2-ethoxyphenes									4.19	-1.92			0.82	-1.44		
Cl-2-naphthalen-2-ethoxyphenes										3.42			1.20		-1.95	
Cl-3-naphthalen-2-ethoxyphenes										0.11			-0.25		5.89	
Cl-4-naphthalen-2-ethoxyphenes													2.34	-1.44		
Cl-1-BaA/chrysenes	-1.65	1.56	-1.90		0.11	-0.52		-1.39	1.34	1.81	-1.62		0.27	-1.09	1.31	1.97
Cl-2-BaA/chrysenes	-1.80	0.07	-1.09		-0.25		-1.01		1.55	2.86	-1.98		0.69	-1.17	1.10	2.34
Cl-3-BaA/chrysenes	-1.75	0.21							-3.71	1.28	-1.05		2.28	-1.42	1.25	4.18
Cl-4-BaA/chrysenes		0.20							-2.52	0.39	-1.35		2.74	-2.50	-1.60	6.13

Table 6. Marine Sediment (QAI0SED10); z-scores (25%) - Biomarkers

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Carbazole						2.30	2.79	-1.32		-0.16	1.32	-0.83	-1.67		-0.39	-1.46	0.33	
$\Gamma\alpha(H)$ -22,29,30-Tisnorhopane	1.87					2.74			-0.76	1.32		-0.61	-1.55		-1.55	-1.20	0.49	
$\Gamma\alpha(H)$,21 $\beta(H)$ -30-Norhopane	-0.98					3.14		1.22	0.21	0.35	0.93	0.53	0.26	0.04	-1.12	-0.21	-2.04	-1.07
$\Gamma\alpha(H)$,21 $\beta(H)$ -Hopane	0.34																	0.55
$\alpha\alpha$ 20R- α -Cholestane	-0.19					4.52		0.69	2.65	0.53	0.23	0.28	0.23	0.28		0.49	-0.85	1.31
$\alpha\beta$ 20R- α -Cholestane	-0.92					1.80		0.90	0.30	0.46	-0.41	-1.68		1.69	-0.89	0.73		
$\alpha\beta$ 20R-24S-Methylcholestane	-0.01					1.59		0.84	-0.77	0.40	-0.37	-1.44		0.44	-0.65	1.34		
$\alpha\alpha$ 20R-24R-Ethylcholestane	0.14					1.03		1.19	-0.03	0.78	-0.46	-0.48		-1.16	-0.54	0.56		
$\alpha\beta$ 20R-24R-Ethylcholestane	-0.38					1.62		0.11	-0.43	0.50	-1.50	-1.42		1.20	-0.28	2.65		
$\Gamma\alpha(H)$,21 $\beta(H)$ -22R-Homohopane	-0.13					2.22		-0.16	0.84	0.23	-1.06	-1.12		-2.82	-0.80	0.20		
$\Gamma\alpha(H)$,21 $\beta(H)$ -22S-Homohopane	0.75							0.23	0.64	0.28	-0.71	-0.85		-2.72	-0.64	0.98		

Table 6 (cont.). Marine Sediment (QAI0SED10); z-scores (25%) - Biomarkers

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
Carbazole			-0.53	2.38		3.35				-1.11		-0.28			0.76		
$\Gamma\alpha(H)$ -22,29,30-Tisnorhopane	-1.49		-0.41			-0.93				2.21			0.07				
$\Gamma\alpha(H)$,21 $\beta(H)$ -30-Norhopane	-1.36					-1.06				2.29			0.60		2.00		
$\Gamma\alpha(H)$,21 $\beta(H)$ -Hopane	-1.09		0.74		-1.16	-2.28				0.94		0.79					
$\alpha\alpha$ 20R- α -Cholestane	-0.96					0.18				-2.42		0.11					
$\alpha\beta$ 20R- α -Cholestane	-0.99					12.94		-0.90		-0.72		-0.44					
$\alpha\alpha$ 20R-24S-Methylcholestane	-1.11		0.25		-0.41					0.29		0.23					
$\alpha\beta$ 20R-24R-Ethylcholestane	-1.43					-0.97				0.04		0.21					
$\Gamma\alpha(H)$,21 $\beta(H)$ -22R-Homohopane	-1.28					-1.69				-0.40		0.74					
$\Gamma\alpha(H)$,21 $\beta(H)$ -22S-Homohopane	-1.03					-1.42				4.01		1.55					

Tables 7 through 9: % differences from Exercise Assigned V values color coded by extraction method

Soxhlet	Yellow
EPA 3545; ASE	Purple
EPA 3541; Soxhlet	Blue
EPA 3550B; EPA 3550C; Sonication	Green
Tumbler; Shaker; Partitioning	Orange
Quechers	Teal

Table 7. Marine Sediment (QA10SE010); % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by extraction method

Color coded by extraction method	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Percent Water	-0.79%	0.32%	1.93%	-5.05%	-5.89%	1.72%	-0.17%	-0.03%	-0.17%	-0.33%	-21.93%	2.21%	3.39%	-0.93%	-2.89%	0.40%	-3.41%		
TOC (%)											7.44%	14.19%							
Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
naphthalene	52.76%	28.46%	9.80%	-22.49%	50.30%	18.72%	-67.60%	81.50%	-62.63%	-84.02%	-43.20%	-15.72%	-36.54%	-32.05%	-32.05%	-63.40%			
biphenyl	20.44%	17.38%			73.58%	12.08%	-61.08%	48.37%	-47.27%	-46.79%	-14.75%	-26.88%	-13.21%	-69.37%	-3.04%	-3.04%	-38.74%		
acenaphthene	18.28%	28.54%			6.22%	19.06%	-43.83%	34.15%	-21.99%	-56.01%	-16.77%	-32.19%	-21.81%	-10.93%	-11.44%	-24.09%			
acenaphthylene	0.61%	-89.46%			45.66%	64.58%	-29.93%	-19.01%	47.54%	-1.65%	6.69%	-1.19%	78.01%	-37.12%	-179.12%	-30.32%	-19.68%		
fluorene	10.71%	3.16%			70.07%	33.37%	-45.97%	95.66%	-35.44%	62.93%	30.57%	-32.06%	-0.77%	75.02%	4.15%	-49.64%			
phenanthrene	33.22%	38.58%	28.15%	7.67%	16.66%	18.67%	-1.73%	-29.57%	35.61%	-24.76%	-33.37%	3.44%	-27.39%	-15.26%	-22.98%	-1.44%	-22.62%		
anthracene	24.84%	8.73%			24.66%	49.22%	-22.93%	-32.65%	-33.58%	35.14%	-27.82%	-19.11%	13.55%	-9.56%	-35.94%	50.22%	-17.47%	-13.93%	
fluoranthene	14.49%	14.99%	-10.95%	0.73%	24.47%	-14.90%	12.33%	-7.64%	36.06%	-13.34%	-34.78%	22.08%	-38.18%	-13.25%	65.59%	-6.44%	-16.38%		
pyrene	14.63%	10.28%	-0.14%	0.51%	18.31%	4.74%	14.73%	-15.99%	23.74%	-10.78%	-16.10%	13.43%	-22.61%	-36.72%	-33.37%	-6.44%	-21.96%		
benzo[b]fluorene										-25.64%	-47.56%			-26.01%	-37.27%	13.84%			
benz[a]anthracene	11.11%	-6.63%	-25.48%	-11.99%	19.82%	-12.64%	4.67%	-10.47%	8.19%	-15.28%	-19.80%	4.67%	-2.79%	-19.26%	-17.91%	-14.58%			
chrysene	46.59%	-10.26%	-2.47%	23.46%	47.39%		-20.60%	-9.72%	-8.63%	-13.89%	30.49%	-36.24%		31.62%		-2.65%			
triphenylene																			
chrysene triphenylene	9.89%							-7.60%							-27.86%				
benzo[b]fluoranthene	10.9%	-5.36%	-33.67%	27.46%	33.42%	30.15%		-1.57%	4.58%	-11.76%	-38.73%	1.80%	-40.96%	4.39%	21.89%	-9.28%	-6.76%		
benzo[ghi]peranthene	25.59%																		
benzo[k]fluoranthene	24.43%	46.29%	-3.64%	85.54%	-11.58%	-34.34%	30.24%	-12.14%	20.66%	5.39%	30.94%	-40.57%	61.68%			42.22%			
benzo[a]fluoranthene	-3.64%							-6.94%							-9.20%				
benzo[bf]fluoranthene																			
benzo[kl]fluoranthene															-12.33%		-9.01%		
benzo[a+b+k]fluoranthene																			
benzo[a+b]fluoranthene	27.96%	39.45%			37.12%	34.92%	8.90%	-11.85%	8.47%	-11.61%	-9.40%	-1.32%	-37.34%	-5.73%	3.09%	-0.54%	1.13%		
benzo[al]pyrene	19.44%	24.35%	-6.14%	71.59%	10.40%	3.27%	-0.14%	9.70%	-8.46%	-26.17%	-3.19%	-34.77%	-20.82%	49.79%	-3.03%	-24.23%			
perylene	33.52%	22.57%			48.90%	31.42%	0.89%	-9.62%	23.07%	-1.86%	-22.90%	-12.50%	-30.20%	-9.07%	-11.61%	15.71%	-8.63%		
indeno[1,2,3-cd]pyrene	21.21%	22.20%	-3.18%	80.01%	21.46%	13.73%	4.73%	24.80%	-11.68%	-30.00%	-5.24%	9.08%	8.74%	-70.01%	16.11%	-49.27%			
benzo[ghi]perylene	21.09%	36.12%	0.14%	72.46%	14.67%	12.19%	11.27%	29.50%	-3.81%	-30.52%	-0.02%	-42.27%	1.38%	-75.82%	12.19%	-54.04%			
dibenzo[a,h]anthracene	15.14%	9.83%			25.16%	321.74%	37.53%	3.15%	29.61%	-26.03%	5.92%	10.07%	-39.53%	61.27%	-59.97%	14.65%	-23.81%		
dibenzo[a,h]fluoranthracene																			
cis/trans-decalin									-31.07%					-44.22%		88.43%			
dibenzofuran									88.11%	44.70%	-52.63%	-43.47%	-63.06%	-8.89%	-14.41%	25.04%	28.32%	-38.38%	
retene										-43.39%				8.94%		6.79%			
benzothiophene		-32.39%							-39.01%					-52.26%	-64.11%	-37.82%			
dibenzothiophene	30.17%	8.04%							27.57%	43.97%	-26.51%	44.63%	-22.50%	-12.79%	-20.86%	35.64%	0.49%	-20.47%	
naphthobenzothiophene										-24.50%					-42.63%		-38.97%		

Table 7 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by extraction method	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.95%	1.44%	0.74%	0.46%	-0.72%	1.44%	0.27%	1.51%	0.53%	4.22%	9.25%	10.41%	-1.00%	0.67%	1.31%	
TOC (%)				-49.89%				28.26%									
Laboratory No.																	
naphthalene	-70.25%	-39.30%	-72.33%	-58.48%	-42.79%	-42.38%	263.26%	54.06%	68.76%	-80.38%	58.50%	-27.21%	-50.48%	96.38%	100.85%		
o biphenyl	-59.59%	1.36%	-80.33%	-49.69%	-45.92%	506.11%	16.70%	41.73%	20.84%	3.67%	-30.88%	3.67%	-26.99%	25.88%	37.84%		
acenaphthene	-41.9%	9.28%	-44.47%	-46.35%	-41.25%	33.78%	21.04%	-88.66%	20.20%	-80.11%	12.08%	-63.38%	115.18%	-64.21%	-17.49%		
acenaphthylene	-16.94%	90.30%	-57.80%	6.02%	-2.84%	127.62%	40.88%	61.88%	4.20%	-70.99%	-62.11%	-72.76%	5.96%	-19.09%	38.70%	64.74%	35.81%
fluorene	-47.41%	26.23%	-79.20%	-18.68%	-28.34%	236.42%	22.13%	58.79%	13.31%	-62.11%	-72.76%	5.96%	-12.65%	-6.90%	51.04%	36.77%	
phenanthrene	-38.75%	22.12%	-65.35%	-16.21%	-1.44%	-32.68%	5.08%	29.02%	36.77%	-40.35%	48.71%	33.33%	-12.65%	-6.90%			
anthracene	-43.68%	59.05%	-71.51%	101.72%	-18.84%	-15.43%	57.32%	29.11%	-63.51%	74.91%	3.54%	-43.50%	50.68%	2.16%	49.13%		
fluoranthene	-28.89%	25.76%	-59.62%	18.08%	6.53%	-35.14%	-22.02%	13.95%	18.03%	-33.24%	-32.02%	29.44%	-30.08%	-1.75%	16.96%	28.62%	
pyrene	-33.68%	22.65%	-57.86%	1.22%	44.47%	-41.28%	-22.47%	7.78%	21.89%	-45.19%	-34.33%	32.20%	-35.96%	21.46%	13.30%	24.93%	
benzo[b]fluorene			67.53%			195.58%		-49.50%			24.72%		-39.11%		-27.12%		
benz[a]anthracene	-36.95%	2.24%	-64.03%	99.18%	8.19%	-24.94%	-33.57%	90.50%	10.08%	-49.99%	-46.20%	7.11%	-36.17%	5.48%	15.53%	21.71%	
chrysene	-30.93%	42.67%	-82.89%	14.94%	31.98%	-53.00%			-40.86%	-21.86%	-18.42%						
triphenylene																	
chrysene/triphenylene			4.35%					29.17%	9.42%		0.70%		-20.43%				25.63%
benzo[b]fluoranthene	-29.44%	77.64%	-70.49%	-13.03%	-13.49%	-2.72%	-31.01%	36.37%	14.77%	-42.94%	5.74%	-9.64%		5.28%	15.93%		
benzo[j]fluoranthene			-59.22%			103.75%									-18.94%		
benzo[k]fluoranthene	-10.74%	-8.47%	-70.54%	-4.53%	17.07%	72.16%	-52.97%			-18.77%		-58.08%	-33.62%	-25.72%			
benzo[a]fluoranthene			16.29%					5.25%				-8.67%		-3.47%	10.48%		
benzo[b]fluoranthene												-1.11%			50.74%		
benzo[i]fluoranthene																	
benzo[a,b,i+k]fluoranthene																	
benzo[a,b]fluoranthene																	
benzo[e]fluoranthene	-24.9%	-40.21%	-8.6%	-23.80%	25.37%	-23.16%	-9.46%	27.57%	-49.02%		13.86%	-32.42%	4.31%	7.98%	42.51%		
benzo[a]pyrene	-27.5%	17.77%	-88.61%	3.121%	-28.39%	220.59%	-18.16%	7.46%	29.54%	-53.00%	-51.89%	4.54%	-23.91%	-2.04%	18.10%	34.74%	
perylene	-31.53%	-52.99%	-8.63%	-6.75%	160.35%	-51.71%	17.15%	36.06%	-45.13%	9.74%	-19.25%	-13.38%	39.64%	57.08%			
indeno[1,2,3-cd]pyrene	2.82%	40.87%	8.31%	23.13%	-51.62%	158.98%	-22.06%	14.14%	28.15%	-60.38%	-53.49%	11.02%	-15.35%	-31.74%	8.59%	44.88%	
benzo[ghi]perylene	-13.9%	26.10%	-37.38%	38.33%	-51.10%	102.13%	-12.53%	-14.21%	25.79%	-59.11%	-61.12%	14.36%	-20.57%	-14.14%	31.56%	40.94%	
obenz[a,h]anthracene	-19.12%	46.56%		34.44%	-31.24%		-41.95%	12.59%	25.53%	-44.47%	-44.96%	16.75%	-17.14%				
obenz[a,h-r,c]anthracene																	
cis-trans-decalin													-13.15%				
obenzofuran			-9.90%	-69.59%	-21.37%	9.0%	73.46%		-68.79%	31.05%	-19.46%	-14.82%		11.37%			
terene										-76.29%	1.54%	-53.09%	12.47%	99.43%	6.36%	37.24%	
benzothiophene			215.93%			5468.27%			-26.07%				-18.73%		54.45%		
cikenzothiophene	-31.27%	3.62%	-35.44%	4.681%	11.17%	873.67%	2.62%	-1.59%	33.55%	-43.74%	19.76%	-25.54%	23.40%	42.03%	34.60%		
daphthobenzothiophene									150.15%	-60.23%	36.18%						

Table 8. Marine Sediment (Q10SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by extraction method	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
1-methylnaphthalene	24.69%	39.70%					34.81%	14.46%	-59.80%	27.26%	-57.51%	-45.3%	-34.83%	-23.79%	-23.34%	-9.05%	26.08%	-54.15%		
2-methylnaphthalene	42.56%	30.87%					2.14%	-13.69%	35.31%	7.03%	-63.17%	-61.34%	-78.33%	-29.24%	128.13%	-16.16%	-21.69%	28.80%	-62.43%	
2,6-dimethylnaphthalene	51.33%						63.68%	32.51%	-53.94%	-12.54%	-40.96%	-63.80%	-9.05%	9.97%	-18.14%	18.79%	-41.29%			
2,6,17,7-dimethylnaphthalene							55.89%	51.31%	-29.72%		-12.66%	-36.53%	-15.08%	-7.61%					-3.32%	
1-methylphenanthrene	23.34%						0.81%	5.34%	-8.26%	46.61%	30.92%	4.54%	-29.86%	-9.86%	6.68%	6.28%	2.32%	-44.29%		
C1-decalins							14.03%							-29.64%	10.79%					
C2-decalins							17.27%							31.65%	8.99%					
C3-decalins							79.3%							24.38%		-27.20%				
C4-decalins							2.98%							66.74%		-4.76%				
C1-naphthalenes	106.97%						-17.18%	15.52%	-70.58%	101.48%	-64.60%	-65.44%	-37.52%		-24.01%	-39.73%	21.22%	-37.36%		
C2-naphthalenes	83.41%						-35.73%	-11.63%	-63.85%	9.29%	-63.44%	-71.80%	9.34%	-41.16%	-29.14%	-33.72%	-30.19%	-54.85%		
C3-naphthalenes	89.26%						-25.13%	-3.37%	-60.58%	-2.41%	-48.49%	-61.89%	17.47%	-4.25%	-8.95%	-3.5%	-26.07%	-36.31%		
C4-naphthalenes	85.12%						-14.88%	21.66%	-53.85%	-32.19%	-29.16%	-42.39%	-23.60%	8.18%	5.58%	-19.22%	-19.14%			
C1-benzothiophenes							69.85%							-10.18%	22.24%					
C2-benzothiophenes																				
C3-benzothiophenes																				
C4-benzothiophenes								-29.83%								37.75%		-51.9%		
C1-fluorenes	61.25%						-39.61%	-64.40%	-8.58%	-2.75%	-27.51%	3.58%		-40.06%	9.16%	-41.42%				
C2-fluorenes	37.24%						459.63%	-12.75%	-67.85%	-14.41%	1.69%	-65.64%	-49.15%	6.97%	130.93%	10.12%				
C3-fluorenes	78.90%						-37.83%	-40.92%	-14.56%	-75.54%	8.40%	-23.79%	-42.62%	2.55%	75.00%	21.22%	-5.53%			
C1-phenanthrenes/anthracenes	72.57%						11.86%	22.07%	-29.75%	60.68%	-33.24%	-38.94%	-31.02%	53.66%	16.10%	8.37%	-31.9%			
C2-phenanthrenes/anthracenes	42.99%						15.97%		35.97%	-35.64%	-35.97%	-19.11%	-46.22%	-23.46%	10.46%	-13.12%	16.98%	-15.20%	-11.87%	
C3-phenanthrenes/anthracenes	43.20%						41.25%		2.96%	-41.80%	9.28%	-10.23%	-47.20%	-4.63%	-1.31%	39.62%	-17.27%	-12.58%		
C4-phenanthrenes/anthracenes	-11.82%						87.12%	15.51%	-31.16%	-42.43%	43.23%	-6.08%	-7.59%	-13.98%	28.11%	-23.47%	-1.03%			
C1-dibenzothiophenes	19.88%						-1.35%	-11.13%	-47.96%	29.27%	-7.84%	-37.09%	14.94%	-2.14%	-5.30%	17.51%	-27.52%			
C2-dibenzothiophenes	21.06%						5.43%	1.97%	-47.41%	17.04%	-21.41%	-28.61%	-0.07%	-1.93%	-7.04%	14.33%	-25.88%			
C3-dibenzothiophenes	18.33%						-34.46%		30.54%	-42.52%	-16.11%	-16.38%	1.67%	-2.50%	-3.90%	11.04%	-25.28%			
C4-dibenzothiophenes	5.71%						-41.01%	-36.67%	-46.14%	-59.60%	22.12%	5.71%	36.05%	-10.68%	8.09%	1.02%	21.19%			
C1-fluoranthrenes/pyrenes	47.53%						47.88%	-14.53%	-27.45%	13.70%	-6.78%	-51.72%	-20.09%	39.17%	57.63%	-6.18%	-10.55%			
C2-fluoranthrenes/pyrenes	62.65%						50.73%	-34.79%	-14.68%	-47.21%	5.44%	-42.01%	-1.56%	-24.42%	78.26%	3.74%				
C3-fluoranthrenes/pyrenes	62.37%						-8.31%	-24.79%	-32.68%	-63.94%	19.16%	5.62%	-4.08%	-2.24%	46.43%	11.70%	1.92%			
C4-fluoranthrenes/pyrenes	15.33%									-41.79%	-82.71%			-32.60%						
C1-naphthobenzoethiophenes										1.54%				2.25%		-4.49%				
C2-naphthobenzoethiophenes										-5.84%				-10.06%		-50.83%				
C3-naphthobenzoethiophenes										-30.06%				-46.28%		-67.34%				
C4-naphthobenzoethiophenes										4.84%	1.28%	-37.72%	-6.59%	-15.17%	-8.83%	-7.87%	-58.87%			
C1-B[a]A/chrysenes	36.16%																		9.06%	
C2-B[a]A/chrysenes	43.06%																		3.81%	
C3-B[a]A/chrysenes	10.33%																		-5.75%	
C4-B[a]A/chrysenes	10.32%																		-1.73%	

Table 8 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by extraction method	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene		-66.96%	-21.87%	-53.90%	-55.89%	182.43%	36.68%	7.78%			24.69%	-28.40%	15.32%	100.82%			
2-methylnaphthalene		-69.16%	-23.17%	-70.30%	-55.14%	-45.52%	208.30%	51.30%	41.53%	-83.72%	38.27%	-33.38%	-41.82%	31.17%	98.23%		
2,6-dimethylnaphthalene										206.28%	64.20%	52.90%	-77.18%	11.54%	32.37%	-20.02%	-27.49%
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene																	
1-methylphenanthrene																	
C1-decalins																	
C2-decalins																	
C3-decalins																	
C4-decalins																	
C1-naphthalenes																	
C2-naphthalenes																	
C3-naphthalenes																	
C4-naphthalenes																	
C1-benzothiophenes																	
C2-benzothiophenes																	
C3-benzothiophenes																	
C4-benzothiophenes																	
C1-fluoranes																	
C2-fluoranes																	
C3-fluoranes																	
C1-phenanthrenes/anthracenes																	
C2-phenanthrenes/anthracenes																	
C3-phenanthrenes/anthracenes																	
C4-phenanthrenes/anthracenes																	
C1-dibenzothiophenes																	
C2-dibenzothiophenes																	
C3-dibenzothiophenes																	
C4-dibenzothiophenes																	
C1-fluoranthenes/pyrenes																	
C2-fluoranthenes/pyrenes																	
C3-fluoranthenes/pyrenes																	
C4-fluoranthenes/pyrenes																	
C1-naphthobenzothiophenes																	
C2-naphthobenzothiophenes																	
C3-naphthobenzothiophenes																	
C4-naphthobenzothiophenes																	
C1-B[a]A/chrysenes																	
C2-B[a]A/chrysenes																	
C3-B[a]A/chrysenes																	
C4-B[a]A/chrysenes																	

Table 9 (cont.). Marine Sediment (QA10SED10): % differences from exercised assigned values - Biomarkers

Color coded by extraction method	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole																		
17 α (H)-22,29,30-Triisorhopane	46.85%																	
17 α (H),21[β (H)-30]-Norhopane	-24.40%																	
17 α (H),21[β (H)-Hopane	8.58%																	
$\alpha\alpha$ 20R- ϵ -Cholestanate	-4.65%																	
$\alpha\beta\beta$ 20R- ϵ -Cholestanate	-23.09%																	
$\alpha\beta\beta$ 20R-24S-Methylcholestanate	-0.26%																	
$\alpha\alpha$ 20R 24R-Ethylcholestanate	3.45%																	
$\alpha\beta\beta$ 20R 24R-Ethylcholestanate	-9.60%																	
17 α (H),21[β (H)-22R]-Homohopane	-3.30%																	
17 α (H),21[β (H)-22S]-Homohopane	18.80%																	

Table 9 (cont.). Marine Sediment (QA10SED10): % differences from exercised assigned values - Biomarkers

Color coded by extraction method	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole																	
17 α (H)-22,29,30-Triisorhopane	-37.21%																
17 α (H),21[β (H)-30]-Norhopane	-33.98%																
17 α (H),21[β (H)-Hopane	-27.15%																
$\alpha\alpha$ 20R- ϵ -Cholestanate	-23.96%																
$\alpha\beta\beta$ 20R- ϵ -Cholestanate	-24.67%																
$\alpha\beta\beta$ 20R-24S-Methylcholestanate	-24.64%																
$\alpha\alpha$ 20R 24R-Ethylcholestanate	-27.83%																
$\alpha\beta\beta$ 20R 24R-Ethylcholestanate	-35.63%																
17 α (H),21[β (H)-22R]-Homohopane	-32.03%																
17 α (H),21[β (H)-22S]-Homohopane	-25.81%																

Tables 10 through 12: % differences from Exercise Assigned Values color coded by quantitation method

IS/surrogate standards used for quantitation calculations were:

- those added prior to extraction
- those added after extraction/cleanup and just prior to chromatographic analysis - not correct for recovery
- those added after extraction/cleanup and just prior to chromatographic analysis - correct for recovery

Table 10. Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by quantitation method

	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water		-0.79%	0.32%	1.93%	-5.05%	5.89%	1.72%	-0.17%	-0.03%	-0.17%	-0.33%	-21.93%	2.21%	3.39%	-0.93%	-2.89%	0.40%	-3.41%
TOC (%)								7.44%	14.19%									
Laboratory No.																		
naphthalene		52.76%	28.46%	9.80%	-22.49%	50.30%	18.72%	-67.60%	81.50%	-62.63%	84.02%	-43.20%	-15.72%	-36.54%	-36.23%	32.05%	-63.40%	
biphenyl		20.44%	17.38%			73.58%	12.08%	-61.08%	48.37%	-47.27%	-46.79%	14.75%	-26.88%	-13.21%	69.37%	-3.04%	-38.74%	
acenaphthene		18.24%	28.54%			6.22%	19.06%	-43.83%	34.15%	-21.99%	-56.01%	-16.77%	-32.19%	-21.81%	109.38%	11.44%	-24.09%	
acenaphthylene		0.61%	-89.46%			45.66%	-64.58%	-29.93%	-19.01%	47.54%	-1.65%	6.69%	-1.19%	-78.01%	-37.11%	179.72%	30.32%	19.68%
fluorene		10.71%	3.46%			70.07%	33.37%	-45.97%	95.66%	-55.44%	-62.93%	-30.57%	-32.06%	-0.77%	75.02%	4.35%	-49.64%	
phenanthrene		33.27%	38.58%	28.15%	7.67%	16.66%	18.67%	-1.73%	-29.57%	35.63%	-24.76%	-33.37%	3.44%	-27.39%	-15.26%	22.98%	-1.44%	-22.62%
anthracene		24.84%	8.73%	-24.66%	49.22%	-22.93%	-32.65%	-33.58%	35.14%	-27.82%	-19.11%	13.55%	-9.56%	-35.94%	50.22%	17.47%	-13.93%	
fluoranthene		14.49%	14.99%	-10.95%	0.73%	24.47%	14.90%	12.33%	-7.64%	36.06%	-13.34%	-34.78%	22.08%	-38.18%	-13.25%	65.59%	-6.44%	-16.38%
pyrene		14.63%	10.28%	-0.14%	0.51%	18.31%	4.74%	14.73%	-1.59%	23.74%	-10.78%	-16.10%	-13.43%	-36.72%	22.61%	53.37%	6.44%	-21.96%
benzo[b]fluorene									-25.64%	-47.56%				-26.01%	-37.27%			
benz[a]anthracene		11.11%	-4.63%	-25.48%	-11.99%	19.82%	-12.64%	4.67%	-10.47%	8.19%	-15.28%	-19.80%	4.67%	-2.79%	-19.26%	-74.19%	-17.91%	-14.58%
benzo[b]fluoranthene		46.59%	-10.26%	-2.47%	23.46%	47.39%			-20.60%	-9.72%	-8.63%	-13.89%	30.89%	-36.24%		31.62%		-2.65%
benzo[k]fluoranthene		24.43%	46.29%	-3.64%	85.34%	-11.58%	-34.34%	30.24%	-12.14%	20.66%	5.39%	30.84%	-40.57%		61.68%		42.22%	
benzo[a]fluoranthene		-3.6%					-6.94%								-9.29%			
benzo[b-]fluoranthene																		
benzo[fl]fluoranthene																-12.33%	-9.01%	
benzo[a+b]fluoranthene																		
benzo[e]pyrene		27.96%	39.45%			37.12%	34.92%	8.96%	-11.85%	8.47%	-11.61%	-9.40%	-1.32%	-37.34%	-5.73%	3.09%	-0.59%	1.13%
benzo[a]pyrene		19.44%	24.35%	-6.14%	71.59%	10.40%	3.27%	-0.14%	9.70%	-8.46%	-26.17%	-3.19%	-34.77%	-20.82%	49.79%	-3.02%	-24.23%	
perylene		33.52%	22.57%			48.90%	31.42%	0.89%	-9.62%	23.07%	-1.86%	-22.90%	-12.50%	-30.20%	-9.07%	-11.61%	15.71%	-8.63%
indeno[1,2,3-cd]pyrene		21.26%	22.20%	-5.18%	80.01%	21.46%	13.73%	4.73%	24.80%	-11.68%	-30.00%	-5.24%	9.08%	8.74%	-70.01%	16.11%	-49.27%	
benzo[ghi]perylene		21.03%	36.12%	0.14%	72.46%	14.67%	12.19%	11.27%	29.50%	-3.84%	-30.52%	-0.02%	-42.21%	1.38%	-75.82%	12.19%	-54.04%	
dibenz[a,h]anthracene		15.14%	9.83%	25.16%	32.17%	37.53%	3.15%	29.61%	-26.03%	5.92%	10.07%	-39.52%	61.27%	-59.59%	14.65%	-23.81%		
dibenz[a,h-]anthracene																		
cis/trans-decalin									-31.07%	44.70%	-43.47%	-63.06%	-8.89%	-6.33%	-14.41%	25.04%	88.43%	
dibenzofuran																		
retene																		
benzothiophene			-32.39%															
dibenzothiophene		30.17%	8.04%						27.57%	43.97%	24.19%	44.63%	-22.50%	-26.48%	-12.79%	64.11%	-37.82%	
naphthobenzothiophene																		

Table 10 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by quantitation method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water	0.95%	1.44%	0.74%	0.46%	-0.72%	1.41%	0.27%	1.51%	0.53%	4.32%	9.25%	10.44%	-1.00%	0.67%	1.33%	
TOC (%)			-49.89%			28.26%										

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
naphthalene	-70.25%	-39.30%	-72.33%	-58.48%	-42.79%	-263.26%	-54.06%	68.76%	-80.38%	58.50%	-27.21%	-50.48%	96.38%	100.85%		
biphenyl	-59.59%	1.36%	-80.33%	-49.69%	-45.92%	506.11%	16.70%	41.73%	20.84%	3.67%	-30.88%	32.33%	50.01%			
acenaphthene	-41.9%	9.28%		-44.43%	-46.33%	506.11%	11.25%	33.78%	21.04%	-88.66%	20.20%	-36.99%	25.88%	37.84%		
acenaphthylene	-16.94%	90.30%	-57.89%	-6.02%	-2.84%	127.62%	-40.68%	61.88%	4.20%	-70.99%	-80.11%	12.08%	-63.38%	115.18%	-17.49%	
Fluorene	-47.41%	-26.23%	-79.20%	-18.66%	-28.34%	236.42%	22.13%	58.79%	13.31%	-62.11%	-72.76%	5.96%	-19.09%	38.70%	64.74%	
Phenanthrene	-38.77%	22.12%	-65.35%	-1.621%	-1.44%	-32.68%	5.08%	29.02%	36.77%	-40.35%	-48.71%	33.33%	-12.65%	-6.90%	51.04%	
Anthracene	-43.68%	59.05%	-71.51%	101.72%	-18.84%	-15.43%	57.32%	29.11%	-63.51%	-74.91%	3.56%	-43.59%	50.68%	2.16%	49.13%	
Fluoranthene	28.89%	25.76%	-59.62%	18.08%	6.53%	-35.14%	22.02%	1.95%	18.03%	-43.24%	-32.02%	29.44%	-30.08%	-1.75%	16.06%	
Pyrene	-33.68%	22.65%	-57.86%	1.22%	44.47%	-41.28%	-22.47%	7.78%	21.89%	-45.19%	-34.33%	32.20%	-35.96%	21.46%	13.30%	
benzol[b]fluorene			67.53%		195.58%		-49.50%				-24.72%		-39.11%		-27.12%	
benz[a]anthracene	-36.95%	2.24%	-64.03%	99.18%	8.19%	-24.94%	-33.57%	90.50%	10.08%	-49.99%	-46.20%	7.11%	-36.17%	5.48%	15.53%	
chrysene	-30.93%	42.67%	-82.89%		14.94%	31.98%	-53.00%			-40.86%	-21.86%		-18.42%			
triphenylene																
chrysene/triphenylene																
benzol[b]fluoranthene	-29.44%	77.64%	-70.49%	-13.03%	-13.49%	-2.72%	-31.01%	36.37%	14.77%	-42.94%	5.74%	-9.64%	5.28%	15.93%		
benzol[i]fluoranthene																
benzol[k]fluoranthene	-10.74%	-8.47%	-70.54%	-43.53%	17.07%	72.16%	-52.97%			-18.77%		-58.08%	-33.62%	-25.72%		
benzol[a]fluoranthene																
benzol[b]fluoranthene																
benzol[i]fluoranthene																
benzol[a,b]fluoranthene																
benzol[a,b]fluoranthene																
benzol[cl]pyrene	24.93%	40.21%	-1.86%	23.80%	25.27%	23.16%	9.46%	27.57%	-49.02%	13.86%	-32.42%	4.31%	7.98%	42.51%		
benzol[al]pyrene	-27.58%	17.77%	-88.61%	3.121%	-28.39%	220.59%	-18.16%	7.46%	29.54%	-53.00%	-51.89%	4.54%	-23.91%	2.04%	18.10%	
Perylene	-31.53%		-52.99%	-8.63%	-6.75%	160.35%	-51.71%	17.15%	36.06%	-45.13%	9.74%	-19.25%	-13.38%	39.64%	57.08%	
Indeno[1,2,3-cd]pyrene	2.82%	40.87%	8.31%	23.13%	-51.62%	158.98%	-22.06%	14.14%	28.15%	-60.38%	-53.49%	11.02%	-15.35%	-31.74%	8.59%	
benzol[el]pyrene	-13.99%	26.10%	-37.38%	38.83%	-51.10%	102.13%	-12.53%	-14.21%	25.79%	-59.11%	-61.12%	14.36%	-20.57%	-14.14%	31.56%	
dibenz[a,h]anthracene	-19.12%	46.56%		34.44%	-31.24%		-41.95%	12.59%	-44.47%	-44.96%	16.75%	-17.14%				
cis/trans-decalin																
dibenzofuran	-9.90%	-69.59%	-21.37%													
retene																
benzo[othiophene]																
dibenzo[othiophene]	-31.27%	3.62%	-35.44%	-46.681%	11.17%	873.67%	2.62%	-1.59%	33.55%	-43.74%	19.76%	-25.54%	23.40%	42.03%	34.60%	
naphthobenzothiophene																

Table 11. Marine Sediment (Q.A10sF10): % differences from exercised assigned values - Alkylated PAHs

Color coded by quantitation method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	24.69%	30.70%				34.81%	14.56%	-59.80%	27.26%	-57.51%	-45.13%	-34.83%	-23.79%	-23.34%	-9.05%	26.08%	-54.35%
2-methylnaphthalene	42.56%	30.87%	-2.14%	-13.69%	35.31%	7.03%	-63.17%	29.31%	-61.34%	-78.33%	-29.24%	128.13%	-16.06%	-21.69%	28.80%	-62.43%	
2,6-dimethylnaphthalene	51.13%				63.64%	32.51%	-53.94%	-12.54%	-40.96%	-63.80%	-9.03%		9.97%	-18.14%	18.79%	41.29%	
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene															-7.61%	27.57%	-3.32%
1-methylphenanthrene	23.34%				0.81%	5.34%	-8.26%	46.61%	-30.93%	4.54%	-29.86%	-9.86%	6.68%	6.28%	23.21%	-44.29%	
Cl-decalins								14.03%						2.964%		10.79%	
C2-decalins								17.27%						31.65%		8.99%	
C3-decalins								79.53%						24.38%		-27.20%	
C4-decalins								2.98%						66.74%		-4.76%	
Cl-naphthalenes	106.91%		-17.18%		15.52%	-70.58%	101.48%	-64.60%	-65.44%	-37.52%		-24.01%	-39.73%	21.22%	-37.36%		
C2-naphthalenes	83.41%		-35.73%	-11.63%	-63.85%	9.29%	-63.44%	-71.80%	9.34%	-4.16%	-29.14%	-33.72%	-30.19%	-54.83%			
C3-naphthalenes	89.26%		-25.13%	3.37%	-60.58%	-2.41%	-48.49%	-61.89%	17.47%	-4.25%	-84.55%	-3.57%			-26.07%	-36.31%	
C4-naphthalenes	85.12%		-14.88%	21.66%	-53.85%	-32.19%	-29.16%	-42.39%	-23.60%		8.18%	5.58%	-19.22%	-19.14%			
Cl-benzothiophenes					-69.83%						-0.18%		-22.24%				
C2-benzothiophenes																	
C3-benzothiophenes																	
C4-benzothiophenes																	
Cl-fluorenes	61.25%		1023.33%	-39.61%	-64.40%	-8.58%	-27.75%	-27.21%	3.58%		-40.06%	9.16%	-41.42%				
C2-fluorenes	37.24%		459.63%	-12.75%	-67.85%	-14.41%	1.69%	-65.64%	-49.15%		6.97%	130.93%	10.12%				
C3-fluorenes	78.90%		-37.83%	-40.92%	-14.56%	-75.54%	8.40%	-23.79%	-42.62%		2.55%	75.00%	21.22%	5.53%			
Cl-phenanthrenes/anthracenes	72.57%		11.86%	22.07%	-29.75%	60.68%	-33.24%	-38.94%	-31.02%	53.46%	-16.30%	8.37%	-8.82%	-31.49%			
C2-phenanthrenes/anthracenes	42.99%		15.97%	15.97%	-35.64%	35.97%	-19.11%	-46.22%	-23.46%	10.46%	-13.32%	16.98%	-15.20%	-11.87%			
C3-phenanthrenes/anthracenes	43.20%		41.25%	2.96%	-41.80%	9.28%	-10.23%	-47.20%	4.63%	-11.31%	39.62%	-17.27%	-12.58%				
C4-phenanthrenes/anthracenes	-11.82%		87.12%	15.51%	-31.16%	-42.43%	43.23%	-6.68%	-7.59%	-15.98%	28.11%	-23.47%	-1.03%				
Cl-dibenzothiophenes	19.88%		-1.35%	-11.11%	-47.96%	29.27%	-7.84%	-37.00%	14.94%		-2.14%	-5.30%	17.51%	-27.52%			
C2-dibenzothiophenes	21.06%		5.43%	13.97%	-47.41%	17.04%	-21.41%	28.61%	-0.07%		-1.93%	-7.04%	14.33%	-25.88%			
C3-dibenzothiophenes	18.33%		-34.46%	30.54%	-42.52%	-18.49%	-16.11%	-16.38%	1.67%		-2.59%	-3.90%	11.04%	-25.28%			
C4-dibenzothiophenes	5.71%		-41.01%	-3.67%	-46.14%	-59.60%	22.42%	5.71%	36.05%	-10.68%	8.90%	1.02%	-21.19%				
Cl-fluoranthrenes/phenylenes	47.53%		47.89%	14.53%	-27.45%	13.70%	-6.78%	-51.22%	-20.09%	-39.17%	-22.28%	57.63%	-6.18%	-10.55%			
C2-fluoranthrenes/phenylenes	62.65%		50.73%	-34.79%	-14.68%	-47.21%	5.44%	-42.01%	-1.56%	-24.42%	78.26%	3.74%	3.95%				
C3-fluoranthrenes/phenylenes	62.37%		-8.31%	-24.79%	-32.68%	-63.94%	19.16%	5.62%	-4.08%	-25.24%	46.43%	11.70%	1.92%				
C4-fluoranthrenes/phenylenes	15.33%		-41.79%				-82.71%			-3.260%							
Cl-naphthobenzothiophenes					1.54%									44.98%			
C2-naphthobenzothiophenes					5.84%									-10.06%		-50.83%	
C3-naphthobenzothiophenes					-30.06%									-46.28%		-67.34%	
C4-naphthobenzothiophenes					12.26%									-6.41%		-58.87%	
Cl-[B]3[A]A/anthryenes	36.16%		4.84%	14.28%	-37.72%	-6.59%	-15.17%	8.83%	-8.78%	-7.33%	28.69%	-13.30%	9.06%				
C2-[B]3[A]A/anthryenes	43.06%		19.21%	18.52%	-35.37%	-17.83%	-11.34%	-19.97%	-21.95%	-22.86%	25.14%	-13.48%	3.81%				
C3-[B]3[A]A/anthryenes	10.33%		11.25%	27.63%	-47.54%	-49.07%	6.02%	-7.04%	7.07%	6.71%		8.98%	-5.75%				
C4-[B]3[A]A/anthryenes	10.32%		12.21%	-32.08%	-86.71%	307.49%	-12.24%			58.98%	14.10%	-1.73%					

Table 11 (cont). Marine Sediment (QAI0SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by quantitation method	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene		-66.96%	-21.87%	-55.90%	-55.89%	182.41%	36.68%	7.78%	24.69%	24.69%	-28.40%	-28.40%	15.32%	100.82%	15.32%	100.82%	
2-methylnaphthalene		-69.16%	-23.17%	-70.30%	-53.74%	-45.52%	208.30%	51.30%	41.53%	-83.72%	38.27%	-33.38%	-41.82%	31.17%	98.23%		
2,6-dimethylnaphthalene																	
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene																	
1-methylnaphthalene																	
C1-decalins																	
C2-decalins																	
C3-decalins																	
C4-decalins																	
C1-naphthalenes		-70.50%	-25.48%	-65.86%	-54.10%					49.10%	105.83%			35.54%	-34.92%	29.84%	141.79%
C2-naphthalenes		-70.03%	-33.88%	-77.03%	-70.92%	305.71%	137.24%	0.18%	86.71%					-29.46%	-51.80%	5.81%	93.94%
C3-naphthalenes		-63.92%	-21.43%	-51.50%	-53.17%	136.50%	-13.80%	91.61%					-18.87%	-47.27%	81.69%		127.63%
C4-naphthalenes		-53.00%	-45.56%	-91.13%	-51.30%	142.86%	5.23%	85.98%					-7.40%	-41.88%	-20.50%		190.59%
C1-benzothiophenes				0.90%										-5.26%			139.94%
C2-benzothiophenes																	
C3-benzothiophenes																	
C4-benzothiophenes																	
C1-fluorenes		-77.84%	107.30%	25.11%				41.65%	-27.88%	64.72%				-51.44%	-63.01%	167.70%	97.04%
C2-fluorenes		-67.62%	5.87%	91.75%				19.32%	30.97%	116.94%				31.42%	26.12%	10.12%	-6.31%
C3-fluorenes		-38.95%	-9.83%	-92.33%	-21.61%			12.05%	73.14%	173.91%				15.64%	-82.17%	-12.22%	37.10%
C1-phenanthrenes/anthracenes		-65.25%	0.40%	-66.49%	-62.68%	-86.29%	-6.58%	18.17%	73.64%	-72.65%			27.80%	-10.32%	108.51%		102.29%
C2-phenanthrenes/anthracenes		-48.73%	27.85%	-52.58%	-3.02%			-9.18%	22.01%	52.21%	-36.22%		18.29%	-8.68%	-25.64%		90.18%
C3-phenanthrenes/anthracenes		-42.91%	5.83%	-71.28%	-12.94%	-2.11%	18.67%	68.34%	-29.92%				5.12%	-24.6%	-40.39%		112.77%
C4-phenanthrenes/anthracenes		-42.41%	-41.16%	-57.42%	-33.57%	-17.41%	37.40%	-378.82%	-60.30%				2.24%	-4.29%	-34.26%		216.82%
C1-dibenzothiophenes		-61.39%	21.36%	-58.03%	-10.04%	6.74%	-10.83%	70.84%					39.34%	-2.24%	5.46%		57.41%
C2-dibenzothiophenes		-57.26%	27.35%	-6.9.13%	-12.78%	5.21%	9.90%	142.99%	-26.13%				32.65%	-4.23%	-17.72%		39.66%
C3-dibenzothiophenes		-54.89%	3.74%	-73.57%	0.06%	-0.18%	24.83%	131.14%	-45.75%				31.58%	-0.58%	14.72%		67.02%
C4-dibenzothiophenes		-44.27%	-20.43%					-4.06%	105.67%				27.04%	-7.42%	-30.19%		68.01%
C1-fluoranthenes/pyrenes		-55.26%	15.09%	-34.52%	43.12%	-90.68%	-1.37%	11.58%	225.40%	-39.51%			27.81%	-28.44%	66.97%		26.02%
C2-fluoranthenes/pyrenes		-46.27%	39.09%	-75.74%	11.15%			24.69%	266.88%	-32.93%			36.76%	-54.91%	16.23%		41.84%
C3-fluoranthenes/pyrenes		-35.27%	-6.14%	-67.77%				33.29%	232.47%	-21.01%			76.31%	-55.62%	13.80%		79.59%
C4-fluoranthenes/pyrenes				-43.28%	-7.5.18%	-11.89%		14.05%	75.51%				61.51%	-78.55%	60.19%		139.41%
C1-naphthobenzothiophenes																	
C2-naphthobenzothiophenes																	
C3-naphthobenzothiophenes																	
C4-naphthobenzothiophenes																	
C1-B[a]A/chrysenes		-41.30%	39.12%	-47.53%	2.85%	-13.05%	-34.74%	33.41%	45.33%	-40.48%			6.82%	-27.21%	32.66%		49.31%
C2-B[a]A/chrysenes		-44.89%	1.75%	-27.36%	-6.13%		-25.21%	38.85%	71.50%	-49.60%			17.19%	-29.24%	27.58%		58.60%
C3-B[a]A/chrysenes		-43.79%	5.29%					-92.79%	31.99%	-26.31%			56.90%	-35.57%	31.25%		104.45%
C4-B[a]A/chrysenes			5.12%					-62.92%	9.69%	-33.86%			68.43%	-62.44%	-40.12%		153.24%

Table 12. Marine Sediment (QA10SED10): % differences from exerted assigned values - Biomarkers

Color coded by quantitation method	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole							69.76%	-33.01%							-12.39%			
17 α (H)-22,29,30-Tisnorhopane					57.61%		-19.01%	33.12%	-4.10%	-20.78%	-41.77%				-9.84%	-16.56%	8.13%	
17 α (H),21 β (H)-30-Norhopane				68.43%			5.16%	8.8%	0.68%	-15.16%	-38.69%				-38.65%	-29.96%	12.15%	
17 α (H),21 β (H)-Hopane		8.58%		78.50%	30.41%	9.99%	13.37%	6.61%	0.99%	-27.97%		-5.29%	-51.00%	-26.67%	13.69%			
20 α R-Cholestane		-4.65%		112.99%		17.22%	-66.27%	5.83%		-7.02%			1.228%	-21.35%	32.73%			
20 β R-Cholestane		-2.30%		44.94%		22.41%	7.40%	11.44%	-10.24%	-41.92%			42.30%	-22.21%	18.27%			
20 β 24S-Methylcholestane		-0.26%		39.71%		21.09%	-19.21%	9.92%	-9.23%	-36.04%			10.95%	-16.15%	33.57%			
20 α 24R-Ethylcholestane		3.45%		25.79%		29.69%	-0.78%	19.54%	-11.57%	-11.95%			-28.88%	-13.48%	13.91%			
20 β 24R-Ethylcholestane		-9.60%		40.52%		2.70%	-10.76%	12.48%	-37.57%	-35.57%			29.97%	-7.01%	66.36%			
17 α (H),21 β (H)-22R-Homolopane		-3.30%		55.46%		-3.89%	21.05%	5.72%	-26.48%	-28.05%			-70.40%	-19.89%	5.12%			
17 α (H),21 β (H)-22S-Homolopane		18.80%				5.68%	16.11%	6.89%	-17.80%	-21.35%			-67.89%	-16.09%	24.41%			

Table 12 (cont). Marine Sediment (QA10SED10): % differences from exerted assigned values - Biomarkers

Color coded by quantitation method	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		-13.16%	-59.56%				83.82%			-27.63%			-6.95%		19.10%		
17 α (H)-22,29,30-Tisnorhopane		-37.21%	-10.32%			23.14%				55.16%			1.86%				
17 α (H),21 β (H)-30-Norhopane		-33.98%				-26.42%				57.21%			15.06%		50.08%		
17 α (H),21 β (H)-Hopane		-27.15%		18.58%		-28.92%	-56.89%			23.55%			19.64%				
20 α R-Cholestane		-23.96%								-60.58%			2.75%				
20 β R-Cholestane		-24.67%				4.46%				-18.04%			-11.03%				
20 β 24S-Methylcholestane		-24.64%		323.52%		-22.59%				7.21%			5.68%				
20 α 24R-Ethylcholestane		-27.83%	6.30%			-10.24%				0.90%			5.16%				
20 β 24R-Ethylcholestane		-35.63%				-24.30%				-9.97%			18.38%				
17 α (H),21 β (H)-22R-Homolopane		-32.03%				-42.22%				100.16%			38.75%				
17 α (H),21 β (H)-22S-Homolopane		-25.81%				-35.62%				88.56%			24.11%				

Table 13. Marine Sediment (QA10SED10): laboratory relative standard deviations of three replicates - Water, TOC, and PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Percent Water	0.21%	0.12%	1.55%	1.42%	2.58%	0.82%	0.36%	1.03%	4.12%	2.36%	5.58%	1.51%	1.58%	1.22%	1.12%	0.04%	0.00%	
TOC						4.05%	5.91%											
napthalene	1.23%	4.04%	4.36%	7.81%	17.92%	6.06%	2.14%	20.85%	13.48%	25.19%	20.89%	3.51%	24.61%	13.81%	3.85%			
phenylbenzene	3.58%	4.23%				20.02%	8.17%	2.73%	3.61%	28.36%	14.33%	17.66%	7.85%	54.19%	13.11%	10.96%		
acenaphthene	3.80%	3.90%				2.85%	7.86%	5.33%	2.04%	25.98%	9.20%	16.12%	23.09%	5.75%	19.78%	9.92%	5.34%	
acenaphthylene	6.08%	7.88%				14.32%	8.33%	1.07%	4.80%	34.71%	12.36%	18.51%	29.74%	7.64%	39.64%	12.01%	9.26%	
fluorene	1.91%	6.20%				13.53%	9.30%	6.85%	3.33%	21.78%	56.32%	17.49%	19.77%	5.12%	21.02%	13.03%	24.53%	
phenanthrene	3.18%	7.91%	12.87%	21.64%	8.88%	3.02%	6.33%	8.88%	0.97%	15.11%	16.76%	5.20%	23.90%	6.20%	35.50%	11.65%	8.09%	
anthracene	2.19%	4.42%				6.76%	8.53%	5.30%	4.20%	1.45%	24.14%	8.91%	23.74%	16.53%	8.71%	32.91%	9.53%	10.56%
fluoranthene	0.79%	7.32%	9.60%	21.13%	10.18%	3.26%	7.33%	9.67%	0.88%	15.22%	2.33%	7.81%	25.02%	8.21%	39.95%	11.10%	7.76%	
pyrene	3.79%	6.38%	12.61%	22.83%	9.37%	3.54%	7.68%	8.73%	1.15%	14.69%	2.81%	14.78%	23.36%	8.27%	41.74%	10.67%	5.30%	
benzo[b]fluorene																		
benzo[a]anthracene	3.01%	5.92%	13.16%	21.63%	12.21%	3.26%	10.43%	9.17%	3.77%	17.16%	12.50%	9.14%	22.64%	5.07%	35.39%	12.70%	7.36%	
chrysene		6.68%	11.22%	22.07%	10.25%	4.88%	11.05%	9.49%	1.50%	16.37%	3.48%	12.83%	26.01%	8.33%	34.84%	12.38%	7.31%	
triphenylene		0.77%	12.05%	23.92%	22.22%	8.74%	3.82%	11.59%	2.71%	2.09%	15.56%	74.67%	19.48%					
benzo[b]fluoranthene	0.67%																	
benzo[k]fluoranthene	0.59%	6.35%	1.81%	5.86%	2.46%	1.124%	11.35%	2.57%	15.30%	5.55%	5.59%	33.86%	3.51%	12.06%	7.63%	4.21%		
benzo[a]fluoranthene	3.33%																	
benzo[e]pyrene	0.32%	0.81%				10.83%	2.06%	10.12%	6.51%	2.74%	14.52%	2.04%	4.55%	22.72%	7.07%	2.06%	5.45%	
benzo[a]pyrene	0.90%	2.28%				2.06%	5.89%	2.73%	1.01%	2.49%	0.52%	14.12%	2.66%	7.33%	21.98%	5.74%	10.32%	9.81%
terephene	3.11%	4.77%				11.81%	3.54%	1.05%	4.03%	2.63%	16.64%	5.26%	15.98%	18.20%	5.38%	10.02%	16.93%	5.65%
indeno[1,2,3-cd]pyrene	2.01%	4.80%				3.74%	6.65%	2.19%	1.96%	5.33%	5.11%	15.59%	6.03%	13.73%	23.98%	6.93%	117.56%	12.11%
benzo[ghi]perylene	1.15%	4.84%				3.93%	1.24%	7.62%	10.74%	5.07%	17.58%	9.64%	9.99%	29.07%	5.59%	122.49%	10.36%	24.23%
benz[a]anthracene	2.60%	6.31%				0.51%	3.44%	11.73%	1.63%	1.93%	14.02%	23.86%	12.81%	9.59%	120.59%	11.02%	13.78%	
cis-trans-decalin																		
benzofuran																		
tetene																		
benzothiophene																		
phenothiophene																		
naphthobenzothiophene																		

Table 13 (cont). Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Water, TOC, and PAHs

Percent Water	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
TOC		0.43%	0.24%	0.52%	1.10%	0.30%	0.43%	1.36%	2.03%	5.11%	1.37%	1.01%	0.61%	n=1	0.42%	1.20%		
naphthalene		14.4%	10.24%	7.97%	4.86%	10.30%	6.44%	44.43%	10.44%	7.59%	33.64%	13.00%	13.58%	n=1	3.87%	2.79%		
phenyl		10.72%	13.02%	13.90%	21.78%	23.13%	9.75%	9.97%	18.96%	10.02%	21.45%	16.03%	15.75%	n=1	1.43%	6.30%		
acenaphthene		14.88%	4.95%	5.19%	54.34%	6.71%	18.45%	10.02%	7.17%	33.44%	8.39%	22.62%	8.81%	13.99%	22.68%	2.19%	2.21%	
acenaphthylene		22.17%	7.40%	12.02%	10.63%	8.32%	2.91%	7.17%	8.95%	27.36%	12.97%	59.78%	14.93%	25.26%	n=1	5.93%	8.27%	
fluorene		23.94%	11.80%	5.87%	10.66%	11.15%	11.54%	21.41%	10.17%	12.50%	11.45%	23.10%	34.83%	16.88%	17.80%	2.76%	2.79%	
phenanthrene		17.04%	10.81%	13.76%	14.66%	9.95%	21.41%	10.69%	12.68%	7.52%	10.69%	37.80%	23.04%	9.25%	11.17%	n=1	3.40%	
anthracene		18.33%	11.28%	12.89%	12.37%	1.69%	8.64%	7.40%	10.76%	9.14%	10.49%	24.19%	13.40%	12.06%	12.40%	n=1	2.44%	
fluoranthene		17.85%	11.43%	12.68%	8.96%	11.74%	10.76%	12.25%	12.55%	8.90%	23.05%	12.91%	13.23%	12.80%	n=1	3.54%	1.69%	
pyrene		19.67%	11.68%	13.97%	11.09%	17.44%	10.76%	9.81%	4.97%	10.69%	11.19%	13.22%	11.91%	12.88%	n=1	3.68%	2.19%	
benzo[b]fluorene				30.18%													16.58%	
benz[a]anthracene		19.46%	6.20%	17.38%	10.54%	12.91%	5.99%	13.01%	12.58%	10.81%	23.98%	11.85%	18.10%	14.62%	n=1	4.03%	0.67%	
chrysene		20.52%	15.41%	14.16%	10.34%	12.79%	7.80%	27.58%	16.25%	10.81%	25.74%	13.25%	17.88%	13.33%	n=1		0.88%	
triphenylene				12.12%	10.34%	6.30%	6.30%	14.61%	11.31%	24.29%	9.46%	14.96%	9.75%	n=1	4.16%	3.89%		
benzo[b]fluoranthene		20.44%	10.97%	13.86%	23.39%	10.91%	6.17%	3.08%							n=1	4.18%	2.80%	
benzo[<i>f</i>]fluoranthene				16.86%											n=1			
benzo[<i>k</i>]fluoranthene		18.24%	8.77%	15.69%	1.96%	7.87%	8.19%	39.79%	2.67%	9.61%	10.67%	17.79%	13.09%					
benzo[<i>a</i>]fluoranthene				11.66%											n=1	4.44%		
benzo[e]pyrene		20.77%		16.90%	14.66%	11.55%	4.77%	11.13%	9.93%	8.17%	25.86%	10.63%	10.63%		n=1	5.05%	2.50%	
benzo[a]pyrene		19.48%	10.57%	20.43%	17.12%	1.78%	4.92%	11.08%	10.21%	8.80%	24.90%	7.48%	16.16%	10.94%	n=1	4.43%	0.52%	
perylene		17.93%		18.55%	5.17%	5.83%	30.74%	7.67%	7.70%	8.15%	28.64%	15.92%	12.56%	n=1	2.56%	1.20%		
indenol[1,2- <i>cd</i>]pyrene		15.81%	13.56%	13.80%	16.14%	13.97%	1.69%	9.05%	10.34%	31.22%	10.31%	16.04%	11.39%	n=1	4.23%	11.60%		
benzog[<i>ghi</i>]perylene		22.27%	10.83%	14.10%	17.14%	18.30%	3.75%	13.87%	10.06%	9.95%	32.70%	9.73%	15.22%	12.15%	n=1	3.63%	1.32%	
dibenzo[<i>ah</i>]anthracene		29.83%	19.24%		10.20%	21.34%		17.11%	12.29%	9.79%	15.76%	7.40%	16.53%	13.68%	n=1		6.58%	
cistrans-decalin													6.36%		n=1			
dibenzo[<i>of</i>]furran				9.23%	10.73%	15.34%						13.94%	6.31%	16.67%	22.93%	n=1	16.59%	
retene												13.25%	10.36%	22.57%	14.54%	n=1	4.70%	2.29%
benzothiophene				10.08%		3.98%		9.99%		14.11%	9.41%	24.94%	10.37%	n=1	15.36%			
dibenzothiophene		8.08%	9.95%		7.84%	13.77%		7.58%	15.69%		14.98%	33.20%		17.0%	15.75%	n=1	3.05%	1.77%
naphthobenzothiophene														8.26%	n=1			

Table 14. Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Alkylated PAHs

Laboratory No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1-methylnaphthalene	8.85%	4.26%			24.61%	6.69%	2.56%	3.32%	25.18%	11.01%	12.06%	19.10%	6.67%	24.55%	8.81%	6.30%		
2-methylnaphthalene	1.12%	3.04%			7.72%	21.35%	6.52%	4.62%	5.32%	22.52%	16.54%	16.77%	19.52%	6.61%	20.17%	10.76%	4.42%	
2,6-dimethylnaphthalene	8.19%				20.31%	8.93%	2.48%	10.92%	19.48%	4.48%	16.54%	8.61%	36.97%	12.14%	8.11%			
1,6,7-trimethylnaphthalene					4.17%	11.46%	9.22%	15.47%	15.47%	14.94%	16.42%	3.79%	10.87%	5.77%				
1,6,7-trimethylnaphthalene	3.15%				5.95%	8.77%	10.08%	3.74%	7.11%	7.23%	25.66%	34.43%	9.52%	57.81%	1.97%	26.28%		
C1-decalins					5.21%									10.23%	8.25%			
C2-decalins					0.00%									7.41%		1.00%		
C3-decalins					6.51%									6.85%	3.19%			
C4-decalins					16.06%									5.8%	2.09%			
C1-naphthalenes	0.82%				10.95%	6.15%	4.79%	4.71%	22.68%	12.82%	14.47%	6.69%	22.67%	10.51%	4.70%			
C2-naphthalenes	0.9%				13.17%	6.66%	5.81%	9.47%	26.89%	10.26%	17.49%	20.51%	35.11%	11.82%	7.78%			
C3-naphthalenes	1.02%				8.02%	9.09%	8.36%	11.92%	18.35%	8.79%	16.86%	25.27%	8.84%	41.31%	12.90%	8.79%		
C4-naphthalenes	1.05%				13.48%	13.01%	10.71%	15.76%	22.65%	17.91%	19.36%	9.39%	38.40%	14.14%	9.37%			
C1-benzothiophenes					3.53%									9.18%		7.94%		
C2-benzothiophenes					6.74%									7.47%		12.90%		
C3-benzothiophenes					8.53%									14.02%	2.54%			
C4-benzothiophenes					5.01%									9.50%	15.14%			
C1-fluorenes	2.57%				9.89%	11.46%	7.93%	2.92%	12.10%	11.713%	21.84%	7.34%	67.21%	15.35%				
C2-fluorenes	1.24%				7.80%	36.36%	11.28%	3.17%	13.67%	70.99%	17.84%	5.66%	32.21%	16.86%				
C3-fluorenes	3.93%				15.88%	21.66%	8.66%	4.38%	8.87%	12.94%	36.15%	3.77%	36.35%	13.95%	6.38%			
C1-phenanthrenes/anthracenes	0.53%				9.35%	15.15%	3.63%	21.91%	18.95%	16.09%	30.40%	8.61%	28.90%	12.40%	9.57%			
C2-phenanthrenes/anthracenes	0.64%				8.27%	15.16%	12.89%	6.74%	18.48%	8.10%	14.41%	27.35%	9.50%	40.11%	1.09%	6.91%		
C3-phenanthrenes/anthracenes	1.70%				7.08%	10.53%	11.41%	9.67%	16.88%	6.03%	12.81%	8.58%	44.29%	12.17%	7.26%			
C4-phenanthrenes/anthracenes	1.97%				5.57%	17.84%	10.45%	12.73%	2.00%	41.02%	24.87%	7.01%	31.23%	15.56%	9.77%			
C1-dibenzothiophenes	1.61%				9.07%	10.00%	10.53%	5.48%	17.95%	27.72%	12.82%	10.21%	39.80%	10.10%	4.79%			
C2-dibenzothiophenes	0.79%				9.92%	14.58%	13.10%	8.78%	17.54%	23.76%	15.08%	9.50%	43.57%	10.04%	8.06%			
C3-dibenzothiophenes	0.48%				3.81%	5.09%	7.86%	13.11%	11.00%	9.76%	10.55%	9.28%	34.76%	7.48%	5.85%			
C4-dibenzothiophenes	1.68%				5.10%				7.87%	3.96%	19.74%	14.37%	4.57%	16.71%	39.80%	6.74%	2.86%	
C1-fluoranthene/phenes	3.86%				9.89%	4.03%	6.69%	2.59%	12.11%	3.55%	13.98%	35.86%	5.96%	45.61%	9.09%	4.81%		
C2-fluoranthene/phenes	3.01%				7.80%	6.76%	1.55%	6.33%	14.41%	7.40%	24.20%	1.62%	49.69%	9.17%	3.93%			
C3-fluoranthene/phenes	1.72%				15.88%	7.51%	4.48%	9.26%	17.05%	4.41%	27.58%	4.15%	46.12%	9.85%	1.97%			
C4-fluoranthene/phenes	1.08%					8.54%		3.71%				8.32%		11.34%				
C1-naphthobenzothiophenes													10.63%	5.67%	9.22%			
C2-naphthobenzothiophenes													7.57%	7.57%	9.87%			
C3-naphthobenzothiophenes													8.06%	12.67%				
C4-naphthobenzothiophenes													9.48%	34.95%	10.88%	3.37%		
C1-chrysenes	2.92%					6.05%				6.17%	4.39%	15.72%	0.94%	17.13%				
C2-chrysenes	2.60%					7.89%				13.48%	5.68%	7.13%	9.70%	10.66%		4.13%		
C3-chrysenes	1.88%					6.45%				5.45%	5.78%	13.59%	8.52%	5.50%		13.13%	6.97%	
C4-chrysenes	2.81%					14.59%				2.8%	11.42%	8.70%	15.75%	7.33%	9.70%	12.34%		

Table 14 (cont). Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Alkylated PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
1-methylnaphthalene	8.80%	14.43%	9.83%	11.70%	46.18%	7.81%	6.29%	0.19%	10.92%	14.44%	n=1	2.75%	8.58%	n=1	2.75%	8.58%	
2-methylnaphthalene	7.84%	17.64%	6.97%	9.32%	41.53%	8.17%	8.03%	0.19%	11.40%	17.64%	n=1	2.15%	10.68%	n=1	2.15%	10.68%	
2,6-dimethylnaphthalene	13.41%	11.04%	18.41%	14.86%	38.86%	9.44%	11.92%	0.36%	16.63%	15.68%	n=1	3.77%	1.41%	n=1	3.77%	1.41%	
1,6,7-trimethylnaphthalene	20.67%	4.90%			30.48%	13.60%	16.45%		7.48%	19.05%	n=1		14.74%				
1-methylphenanthrene	26.80%	34.24%	2.26%		0.00%	1.76%	14.09%	4.64%	24.52%		18.24%	14.43%				1.49%	
Cl-1-decalins															n=1		
C2-decalins															n=1		
C3-decalins															n=1		
C4-decalins															n=1		
Cl-1-naphthalenes	7.99%	14.11%	24.93%	10.19%	10.88%	7.50%			12.08%	15.61%	n=1		22.90%				
Cl-2-naphthalenes	16.74%	13.55%	9.88%	15.35%	7.33%	44.45%	8.22%	11.74%	13.70%	13.23%	n=1		13.62%				
C2-1-naphthalenes	18.54%	5.30%	15.41%	26.27%	38.86%	15.25%	5.26%		18.44%	17.90%	n=1		8.85%				
C3-1-naphthalenes	20.02%	2.38%	14.43%	33.56%	36.73%	13.19%	3.75%		17.72%	15.62%	n=1		4.06%				
C1-1-benzothiophenes									23.36%		n=1						
C2-1-benzothiophenes																	
C3-1-benzothiophenes																	
C4-1-benzothiophenes																	
Cl-1-fluorenes	51.43%	13.88%	14.43%			20.24%	14.49%	10.47%		18.46%	21.57%	n=1		39.24%			
C2-1-fluorenes	30.43%	21.10%				28.94%	13.60%	12.74%		11.9%	9.75%	n=1		15.64%			
C3-1-fluorenes	18.34%	10.01%				42.95%	43.25%	10.47%		4.36%	27.47%	n=1		10.02%			
Cl-phenanthrenes/anthracenes	11.36%	31.52%	12.24%	17.48%	1.16%	8.73%	14.10%	11.79%	6.18%	16.72%	16.67%	n=1		11.13%			
C2-phenanthrenes/anthracenes	19.28%	19.92%	100.21%	3.59%		9.16%	15.22%	11.70%	20.41%	16.49%	14.29%	n=1		22.18%			
C3-phenanthrenes/anthracenes	13.78%	21.58%			24.28%	7.54%	14.97%	11.43%	18.01%	12.9%	9.62%	n=1		10.89%			
C4-phenanthrenes/anthracenes	18.72%	14.59%			12.84%	4.27%	12.90%	10.49%	11.99%	13.31%	13.46%	n=1		38.80%			
Cl-1-dibenzothiophenes	25.05%	9.02%	20.49%	15.40%		8.12%	13.98%	12.00%		14.27%	13.89%	n=1		14.46%			
C2-1-dibenzothiophenes	29.76%	23.36%	41.20%	17.39%		9.06%	15.60%	11.78%	9.99%	16.43%	12.48%	n=1		19.36%			
C3-1-dibenzothiophenes	20.95%	7.32%	84.73%	15.71%		6.92%	12.99%	11.96%	19.22%	14.67%	12.28%	n=1		17.93%			
C4-1-dibenzothiophenes	35.95%								7.59%	7.86%		15.29%	8.44%	n=1		17.22%	
Cl-1-fluoranthenes/pyrenes	18.59%	15.54%	22.04%	10.01%	9.62%	7.71%	10.01%	9.36%	30.47%	11.68%	8.33%	n=1		17.90%			
C2-1-fluoranthenes/pyrenes	15.32%	4.36%					6.54%	9.18%	31.59%	6.31%	11.18%	n=1		19.27%			
C3-1-fluoranthenes/pyrenes	18.33%	11.54%					21.19%	7.10%	9.86%	32.51%	5.28%	n=1		23.10%			
C4-1-fluoranthenes/pyrenes	5.34%						12.84%		9.88%		8.01%	19.68%	n=1		23.43%		
Cl-1-naphthobenzothiophenes																	
C2-1-naphthobenzothiophenes																	
C3-1-naphthobenzothiophenes																	
C4-1-naphthobenzothiophenes																	
Cl-1-chrysenes	18.70%	8.04%	7.92%	8.79%	0.49%	8.97%	9.47%	9.23%	27.42%		17.05%	13.36%	n=1		19.32%		
C2-1-chrysenes	14.15%	2.05%	16.40%	55.91%		11.32%	6.23%	9.47%	2.93%		16.28%	14.05%	n=1		9.33%		
C3-1-chrysenes	27.27%	17.76%					9.51%	13.00%	7.83%		12.69%	14.29%	n=1		18.74%		
C4-1-chrysenes									10.04%	2.49%	11.00%		6.50%	11.48%	n=1		51.92%

Table 15. Marine Sediment (QA10SED10): laboratory relative standard deviations of three replicates - Biomarkers

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole																	
C ₁₇ α(H)-22,29,30-Tisnorhopane	2.81%				6.89%			8.77%	5.18%	15.15%	2.08%	15.42%		12.84%	10.42%		
C ₁₇ α(H)-2,1β(H)-30-Norhopane	2.73%				5.80%			6.99%	4.70%	17.97%	8.64%	12.97%		22.04%	7.94%	3.59%	
C ₁₇ α(H)-2,1β(H)-Hopane	0.57%				9.14%			10.98%	7.88%	3.40%	15.32%	1.81%	14.92%		10.80%	46.14%	6.28%
ααα 20R-Cholestane	6.21%				8.51%			6.38%	4.07%	16.58%		33.47%		24.44%	9.45%	7.00%	
αββ 20R-Cholestane	2.96%				13.94%			8.64%	2.33%	16.64%	5.30%	14.29%		17.86%	7.13%	9.43%	
αββ 24S-Methylcholestane	4.85%				7.61%			3.86%	3.77%	17.92%	23.45%		22.81%		8.18%	8.34%	
ααα 20R-24R-Ethylcholestane	1.57%				14.40%			23.65%	5.14%	12.00%	4.97%	13.56%		38.75%	5.61%	17.30%	
αββ 20R-24R-Ethylcholestane	0.54%				25.83%			10.37%	10.23%	29.40%	6.57%		24.17%	14.06%	8.70%		
C ₁₇ α(H)-2,1β(H)-22R-Homohopane	2.09%				7.03%			7.10%	4.42%	19.85%	3.64%	13.24%		57.83%	7.04%	7.57%	
C ₁₇ α(H)-2,1β(H)-22S-Homohopane	2.53%							15.67%	3.28%	17.99%	4.70%	19.00%		73.97%	4.87%	9.37%	

Table 15 (cont). Marine Sediment (QA10SED10): laboratory relative standard deviations of three replicates - Biomarkers

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole																
C ₁₇ α(H)-22,29,30-Tisnorhopane	24.37%	8.24%	8.13%			8.14%		5.59%			7.49%			11.57%	n=1	
C ₁₇ α(H)-2,1β(H)-30-Norhopane	19.66%		13.59%			7.71%					15.03%			9.69%	n=1	
C ₁₇ α(H)-2,1β(H)-Hopane	20.93%		11.37%			6.97%	7.26%				13.33%			9.66%	n=1	
ααα 20R-Cholestane	14.77%													9.43%	n=1	
αββ 20R-Cholestane	29.10%					33.60%					12.82%			13.42%	n=1	
αββ 24S-Methylcholestane	16.52%		6.70%			7.39%					25.95%			10.66%	n=1	
ααα 20R-24R-Ethylcholestane	12.89%		7.67%			25.16%					4.80%			8.72%	n=1	
αββ 20R-24R-Ethylcholestane	22.57%					15.67%					17.32%			15.39%	n=1	
C ₁₇ α(H)-2,1β(H)-22R-Homohopane	32.50%					13.87%					20.42%			14.05%	n=1	
C ₁₇ α(H)-2,1β(H)-22S-Homohopane	21.17%					11.62%					19.88%			10.37%	n=1	
											18.74%			10.56%	n=1	

Table 16. Marine Sediment (QAI0SED10): p scores (15%) - Water, TOC, and PAHs

Percent Water	Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TOC		0.01	0.01	0.10	0.09	0.17	0.05	0.02	0.07	0.27	0.16	0.37	0.10	0.11	0.08	0.07	0.00	0.00
naphthalene	0.08	0.27	0.29	0.52	1.19	0.40	0.32	0.14	1.39	0.90	1.68	1.39	0.24	1.64	0.92	0.26		
biphenyl	0.24	0.28			1.33	0.54	0.18	0.24	1.89	0.97	1.18	0.52	3.61	0.87				
acenaphthene	0.25	0.26			0.19	0.52	0.36	0.14	1.73	0.61	1.07	1.54	0.38	1.32	0.66	0.36		
acenaphthylene	0.41	0.53			0.19	0.95	0.57	0.07	0.32	2.31	0.82	1.23	1.98	0.51	2.64	0.80	0.62	
fluorene	0.13	0.41			0.90	0.62	0.46	0.22	1.45	3.75	1.17	1.32	0.34	1.40	0.87	1.64		
phenanthrene	0.21	0.53	0.86	1.44	0.59	0.20	0.42	0.57	0.06	1.01	1.12	0.35	1.59	0.41	2.37	0.78	0.54	
anthracene	0.19	0.29			0.45	0.57	0.37	0.28	0.10	1.61	0.59	1.58	1.10	0.58	2.19	0.64	0.70	
fluoranthene	0.05	0.49	0.64	1.41	0.68	0.22	0.52	0.64	0.06	1.01	0.16	0.52	1.67	0.55	2.66	0.74	0.52	
pyrene	0.25	0.43	0.84	1.52	0.62	0.24	0.51	0.58	0.08	0.98	0.19	0.99	1.56	0.55	2.78	0.71	0.35	
benz[b]fluorene															1.32	0.49	3.13	
benz[a]anthracene	0.20	0.39	0.88	1.44	0.81	0.22	0.70	0.61	0.25	1.14	0.83	0.61	1.51	0.34	2.36	0.85	0.49	
chlorcene	0.45	0.75	1.47	0.68	0.33	0.74	0.63	0.11	1.09	0.23	0.86	1.73	0.56	2.32	0.83	0.49		
triphenylene																		
benz[b]fluoranthene	0.05	0.80	1.59	1.48	0.58	0.25	0.77	0.18	0.14	1.04	4.98	0.46	1.30	0.66	1.25	0.88	0.27	
benz[j]fluoranthene	0.04																	
benz[k]fluoranthene	0.04	0.42			0.12	0.39	0.16	0.75	0.76	0.17	1.02	0.37	0.37	2.26	0.23	0.80	0.51	0.28
benzo[a]fluoranthene	0.22							0.71							0.31			
benzo[s]pyrene	0.02	0.05				0.72	0.14	0.67	0.43	0.18	0.97	0.14	0.30	1.51	0.47	0.14	0.69	0.36
benzo[a]pyrene	0.06	0.15			0.14	0.39	0.18	0.67	0.17	0.94	0.18	0.49	1.47	0.38	0.69	0.65	0.26	
perylene	0.21	0.32				0.79	0.24	0.70	0.27	0.18	1.11	0.35	1.07	1.21	0.36	0.67	0.73	0.38
indeno[1,2,3-cd]pyrene	0.13	0.32			0.25	0.44	0.15	0.80	0.37	0.34	1.04	0.40	0.92	1.60	0.46	7.84	0.81	1.35
benzo[ghi]perylene	0.08	0.32			0.26	0.51	0.08	0.72	0.34	0.24	1.17	0.64	0.67	1.94	0.37	8.17	0.69	1.62
phenanthro[1,2,3- <i>cd</i>]ace	0.17	0.42			0.03	0.23	0.01	0.78	0.11	0.13	0.93	1.59	0.85	0.85	8.03	0.64		
cis/trans-decalin																1.11		
dibenzofuran																1.24	0.92	0.78
retene																0.54	0.97	
benzothiophene																1.46	0.30	0.96
dibenzothiophene	0.15	0.68				0.68	0.11	0.39	1.07	0.15	2.12	1.43	0.57	1.17	0.45	2.38	0.73	1.33
naphthobenzothiophene								0.67							0.62		0.68	

Table 16 (cont). Marine Sediment (QA10SFID10): p scores (15%) - Water, TOC, and PAHs

	Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.03	0.02	0.03	0.07	0.02	0.03	0.09	0.14	0.34	0.09	0.07	0.04	n=1	0.03	0.08	
TOC				0.26			0.19										
naphthalene	0.96	0.68	0.53	0.32	0.69	0.43	2.96	0.70	0.51	2.24	0.87	0.91	n=1	0.26	0.19		
biphenyl	0.71	0.87		0.93	1.45		1.54	0.65	0.66		1.07	1.05	n=1	0.10	0.42		
acenaphthene	0.99	0.33	0.35	0.62	0.45	1.43	0.67	1.26			1.51	0.54	n=1	0.15	0.15		
acenaphthylene	1.48	0.49	0.80	0.71	0.55	0.19	2.23	0.48	0.56	1.51	0.59	0.95	n=1	0.40	0.55		
fluorene	1.60	0.79		0.39	0.71	0.74	1.84	0.66	0.86		3.99	1.00	1.68	n=1	0.18	0.19	
phenanthrene	1.14	0.72	0.92	0.98	0.66	1.43	0.68	0.83	0.76	1.54	2.32	1.13	n=1	0.23	0.02		
anthracene	1.22	0.75	0.86	0.82	0.11		0.85	0.50	0.71	2.52	1.54	0.62	n=1	0.16	0.24		
fluoranthene	1.19	0.76	0.85	0.60	0.78	0.58	0.49	0.72	0.61	1.61	0.89	0.80	n=1	0.24	0.11		
pyrene	1.31	0.78	0.93	0.74	1.16	0.72	0.82	0.70	0.59	1.54	0.86	0.88	n=1	0.25	0.15		
benzo[b]fluorene		2.01				0.65		0.33			0.86		n=1		1.11		
benzo[a]anthracene	1.30	0.41	1.16	0.70	0.86	0.40	0.87	0.88	0.75	1.60	0.79	1.21	n=1	0.27	0.04		
chrysene	1.37	1.03	0.94	0.69	0.85	0.52	1.84	1.08	0.72	1.72	0.88	1.19	n=1	0.11	0.06		
triphenylene		0.81	0.69	0.42									n=1				
benzo[b]fluoranthene	1.36	0.73	0.92	1.56	0.73	0.41	0.97	0.75	0.75	1.62	0.63	1.00	n=1	0.28	0.26		
benzo[f]fluoranthene		1.12			0.21								n=1	0.28	0.19		
benzo[a]fluoranthene	1.22	0.58	1.05	0.13	0.52	0.55	2.65	0.18	0.64	0.71	1.19	0.87	n=1	0.30			
benzo[e]fluoranthene		0.78						0.50			0.71		n=1	0.34	0.17		
benzo[el]pyrene	1.38		1.13	0.98	0.77	0.32	0.74	0.66	0.54	1.72		0.71	n=1	0.30	0.03		
benzo[a]pyrene	1.30	0.70	1.36	1.14	0.12	0.33	0.74	0.68	0.59	1.66	0.50	1.08	n=1	0.25	0.15		
perylene	1.20		1.24	0.34	0.39	2.05	0.51	0.51	0.54	1.91		1.06	n=1	0.17	0.08		
indeno[1,2,3- <i>cd</i>]pyrene	1.05	0.90	0.92	1.08	0.93	0.11	0.91	0.60	0.69	2.08	0.69	1.07	n=1	0.28	0.77		
benzo[ghi]perylene	1.48	0.72	0.94	1.14	1.22	0.25	0.92	0.67	0.66	2.18	0.65	1.01	n=1	0.24	0.09		
dibenz[a,h]anthracene	1.99	1.28			0.68	1.42	1.14	0.82	0.65	1.05	0.49	1.10	n=1	0.44			
estrans-decain											0.42		n=1				
dibenzofuran	0.62	0.72			1.02			0.93		0.42		1.11	n=1	1.53	1.11		
retene								0.88	0.69	1.50		0.97	n=1	0.31	0.15		
benzothiophene		0.67				0.27		0.67			0.69		n=1		1.02		
dibenzothiophene	0.54	0.66	4.64	0.52	0.92	0.51	1.05	0.94	0.63	1.66		1.18	1.05	n=1	0.20	0.12	
naphthalenethiophene								1.00		2.21		0.55	n=1				

Table 17. Marine Sediment (QA10SED10): p scores (15%) - Alkylated PAHs

Laboratory No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1-methylnaphthalene	0.59	0.28				1.64	0.41	0.17	0.22	1.68	0.73	0.80	1.27	0.44	1.64	0.59	0.42	
2-methylnaphthalene	0.07	0.20			0.51	1.42	0.43	0.31	0.35	1.50	1.12	1.11	1.30	0.44	1.34	0.72	0.29	
2,6-dimethylnaphthalene	0.55					1.35	0.60	0.17	0.73	1.30	0.30	1.10	0.57	2.46	0.81	0.54		
1,6,7-trimethylnaphthalene						0.28	0.76	0.61		1.03	2.28	1.00	0.25		0.72	0.38		
1-methylphenanthrene	0.21					0.40	0.58	0.67	0.25	0.47	0.48	1.71	2.30	0.63	3.85	0.80	1.75	
C1-decalins						0.35								0.68	0.55			
C2-decalins						0.00								0.49	0.73			
C3-decalins						0.43								0.46	0.21			
C4-decalins						1.07								0.39	0.14			
Cl-naphthalenes	0.05				0.73	0.43	0.32	0.31	1.51	0.85	0.96	0.45	1.51		0.70	0.31		
C2-naphthalenes	0.06				0.88	0.46	0.39	0.63	1.79	0.68	1.17	1.37	0.57	2.34	0.79	0.52		
C3-naphthalenes	0.07				0.53	0.61	0.56	0.79	1.22	0.59	1.12	1.68	0.59	2.75	0.86	0.59		
C4-naphthalenes	0.07				0.90	0.87	0.71	1.05	1.51	1.19	1.29		0.63	2.55	0.96	0.62		
C1-benzothiophenes						0.24								0.61	0.53			
C2-benzothiophenes						0.45								0.50	0.86			
C3-benzothiophenes						0.57								0.93	0.17			
C4-benzothiophenes						0.33								0.63	1.01			
Cl-fluorenes	0.17				0.66		0.76	0.53	0.19	0.81	7.81	1.46		0.49	4.48			
C2-fluorenes	0.08				0.52		2.42	0.75	0.21	0.91	4.73	1.19		0.38	2.15	1.12		
C3-fluorenes	0.26				1.06		1.44	0.57	0.29	0.59	0.86	2.41		0.25	3.22	0.93	0.43	
Cl-phenanthrenes/anthracenes	0.04				1.36		0.62	1.01	0.24	1.46	1.26	1.07	2.03	0.57	1.93	0.83	0.64	
C2-phenanthrenes/anthracenes	0.04				0.55		1.01	0.86	0.45	1.23	0.54	1.82	0.63	2.67	0.74	0.46		
C3-phenanthrenes/anthracenes	0.11				0.47		0.70	0.76	0.64	1.13	0.40	0.85	0.57	2.95	0.81	0.48		
C4-phenanthrenes/anthracenes	0.13				0.37		1.19	0.70	0.85	0.13	2.73	1.66	0.47	2.08	1.04	0.65		
Cl-dibenzothiophenes	0.11				0.60		0.67	0.70	0.36	1.20	1.83	0.85	0.68	2.65	0.67	0.32		
C2-dibenzothiophenes	0.05				0.66		0.97	0.59	1.17	1.58	1.01	0.63	2.90	0.67	0.54			
C3-dibenzothiophenes	0.03				0.25		0.34	0.52	0.87	0.73	0.65	0.70	0.62	2.32	0.50	0.39		
C4-dibenzothiophenes	0.11				0.34		0.52	0.26	1.32	0.96	0.30	1.11	0.27	2.65	0.45	0.19		
Cl-fluoranthenes/pyrenes	0.26				0.66		0.27	0.45	0.17	0.81	0.24	0.93	2.39	0.40	3.04	0.61	0.32	
C2-fluoranthenes/pyrenes	0.20				0.52		0.42	0.10	0.42	0.96	0.49	1.61	0.11	3.31	0.61	0.26		
C3-fluoranthenes/pyrenes	0.11				1.06		0.50	0.30	0.62	1.14	0.29	1.84	0.28	3.07	0.66	0.13		
C4-fluoranthenes/pyrenes	0.07					0.57		0.25					0.55					
Cl-naphthobenzothiophenes						0.60							0.71	0.76				
C2-naphthobenzothiophenes						0.64							0.38	0.61				
C3-naphthobenzothiophenes						0.73							0.50	0.66				
C4-naphthobenzothiophenes						0.80							0.54	0.84				
Cl-chrysenes	0.19				0.40		0.66	0.41	0.29	1.05	0.06	1.14		0.63	2.33	0.73	0.22	
C2-chrysenes	0.17				0.53		0.90	0.38	0.48	0.89	0.65	0.71		0.33	2.12	0.78	0.28	
C3-chrysenes	0.13				0.43		0.56	0.39	0.76	0.91	0.57	0.37		0.50	0.88	0.46		
C4-chrysenes	0.19					0.97	0.19	0.76	0.58	1.05		0.49	0.49	0.65	0.82			

Table 17 (cont.). Marine Sediment (QAT10SE10): p scores (15%) - Alkylated PAHs

	Laboratory No	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	0.59	0.96	0.66	0.78		3.08	0.52	0.42		0.73	0.96		n=1	0.18	0.57		
2-methylnaphthalene	0.52	1.18	0.46	0.62	0.79		2.77	0.54	0.01		0.76	1.18	n=1	0.14	0.71		
2,6-dimethylnaphthalene		0.89	0.74	1.23	0.99		2.59	0.63	0.79	0.02		1.11	n=1	0.25	0.09		
1,6,7-trimethylnaphthalene		0.00	1.38	0.33			2.03	0.91		1.10		0.50	n=1				
1-methylphenanthrene	1.79	2.28	0.15		0.00	0.12	0.94	0.31	1.63		1.22	0.96	n=1	0.98	0.10		
C1-decalins													n=1				
C2-decalins													n=1				
C3-decalins													n=1				
C4-decalins													n=1				
C1-naphthalenes	0.53	0.94	1.66	0.68		0.54	0.50						n=1	0.36			
C2-naphthalenes	1.12	0.90	0.66	1.05	0.49	2.96	0.55	0.78					n=1	0.81	1.04		
C3-naphthalenes	1.24	0.35	1.03	1.75		2.59	1.02	0.35					n=1	1.05	0.88		
C4-naphthalenes	1.33	0.16	0.96	2.24		2.45	0.88	0.25					n=1	1.23	1.19		
C1-benzothiophenes		0.87					0.17						n=1	1.18	1.04		
C2-benzothiophenes					1.01		0.68						n=1	1.56			
C3-benzothiophenes							0.08						n=1	0.83			
C4-benzothiophenes							0.40						n=1	0.95			
C1-fluorenes	3.43	0.93	0.96			1.35	0.97	0.70					n=1	1.08			
C2-fluorenes	2.03	1.41				1.93	0.91	0.85					n=1	1.23	1.44		
C3-fluorenes	1.22	0.67			2.86	2.88	0.70	0.91					n=1	0.80	0.65		
C1-phenanthrenes/anthracenes	0.76	2.10	0.82	1.17	0.08	0.58	0.94	0.79	0.41				n=1	0.29	1.83		
C2-phenanthrenes/anthracenes	1.29	1.33	6.68	0.24		0.61	1.01	0.78	1.36				n=1	1.11	1.11		
C3-phenanthrenes/anthracenes	0.92	1.44			1.62	0.50	1.00	0.76	1.20				n=1	1.10	0.95		
C4-phenanthrenes/anthracenes	1.25	0.97			0.86	0.28	0.86	0.70	0.80				n=1	0.86	0.64		
C1-dibenzothiophenes	1.67	0.60	1.37	1.03		0.54	0.93	0.80					n=1	0.89	0.90		
C2-dibenzothiophenes	1.98	1.56	2.75	1.16		0.60	1.04	0.79	0.67				n=1	1.10	0.83		
C3-dibenzothiophenes	1.40	0.49	5.65	1.05		0.46	0.87	0.80	1.28				n=1	0.98	0.82		
C4-dibenzothiophenes	2.40					0.51	0.52						n=1	1.02	0.56		
C1-fluoranthenes/pyrenes	1.24	1.04	1.47	0.67	0.64	0.51	0.67	0.62	2.03				n=1	0.78	0.56		
C2-fluoranthenes/pyrenes	1.02	0.29			1.81		0.44	0.61	2.11				n=1	0.95	0.93		
C3-fluoranthenes/pyrenes	1.22		0.77		1.41		0.47	0.66	2.17				n=1	1.35	0.67		
C4-fluoranthenes/pyrenes		0.36			0.86		0.62	0.66					n=1	0.53	1.31		
C1-naphthobenzothiophenes		0.00					0.81		0.24				n=1	0.81	0.62		
C2-naphthobenzothiophenes								0.27					n=1	0.56	0.67		
C3-naphthobenzothiophenes								0.49					n=1	0.49	0.86		
C4-naphthobenzothiophenes									0.27				n=1	0.47	0.87		
C1-chrysenes	1.25	0.54	0.53	0.59	0.03	0.60	0.63	0.62	1.83				n=1	1.14	0.89		
C2-chrysenes	0.94	0.14	1.09	3.73		0.75	0.42	0.63	0.20				n=1	1.09	0.94		
C3-chrysenes	1.82	1.18				0.63	0.87	0.52					n=1	0.85	0.95		
C4-chrysenes		0.79				0.67	0.17	0.73					n=1	0.43	0.77		

Table 18. Marine Sediment (QA10SED10): p scores (15%) - Biomarkers

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole					0.77	0.43									0.69		
7α(H)-22,29,30-Tisnorhopane	0.19				0.46		0.58	0.35	1.01	0.14	1.03			0.86	0.55	0.54	
17α(H),21β(H)-30-Norhopane	0.18				0.39		0.47	0.31	1.20	0.58	0.86			1.47	0.53	0.24	
7α(H),21β(H)-Hopane	0.04				0.61	0.73	0.51	0.23	1.02	0.12	0.99			0.72	3.08	0.42	
<i>ααα</i> 20R-Cholestan	0.41				0.57			0.43	0.27	1.11				2.23	0.63	0.47	
<i>αββ</i> 20R-Cholestan	0.20				0.93		0.58	0.15	1.11	0.35	0.95			1.19	0.48	0.63	
<i>αββ</i> 20R-24S-Methylcholestan	0.32				0.51		0.26	0.25	1.19	1.56	1.52			0.62	0.55	0.56	
<i>ααα</i> 20R-24R-Ethylcholestan	0.10				0.96		1.58	0.34	0.80	0.33	0.90			2.58	0.37	1.15	
<i>αββ</i> 20R-24R-Ethylcholestan	0.04				1.72		0.69	0.68	1.96	0.37	0.44			1.61	0.94	0.58	
7α(H),21β(H)-22R-Homolopane	0.20				0.47		0.47	0.29	1.29	0.24	0.93			3.86	0.47	0.50	
17α(H),21β(H)-22S-Homolopane	0.17						1.04	0.22	1.20	0.31	1.27			4.93	0.32	0.62	

Table 18 (cont). Marine Sediment (QA10SED10): p scores (15%) - Biomarkers

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		0.55	0.54			0.37				0.50			0.77		n=1	
7α(H)-22,29,30-Tisnorhopane	1.62		0.91	0.54						1.00			0.65		n=1	
17α(H),21β(H)-30-Norhopane	1.31			0.51						0.89			0.64		n=1	
7α(H),21β(H)-Hopane	1.40		0.76	0.46	0.48					1.21			0.63		n=1	
<i>ααα</i> 20R-Cholestan	0.98									0.85			0.89		n=1	
<i>αββ</i> 20R-Cholestan	1.94					2.24				1.73			0.71		n=1	
<i>αββ</i> 20R-24S-Methylcholestan	1.10		0.45		0.49					0.32			0.58		n=1	
<i>ααα</i> 20R-24R-Ethylcholestan	0.86		0.51	1.68						1.15			1.03		n=1	
<i>αββ</i> 20R-24R-Ethylcholestan	1.50			1.04						1.36			0.94		n=1	
7α(H),21β(H)-22R-Homolopane	2.17			0.92						1.33			0.69		n=1	
17α(H),21β(H)-22S-Homolopane	1.41				0.77					1.25			0.70		n=1	

APPENDIX A Instructions Sent to Laboratories

Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment

Intercomparison Exercise: Marine Sediment QA10SED01 Description of Materials and Instructions

Intercomparison Exercise Materials:

Each of the three jars contains approximately 19 g (wet basis) of Marine Sediment QA10SED01. This wetted sediment was prepared from material collected from the northeastern section of the US coast and then freeze-dried, ground sieved, and radiation-sterilized. This material was not enriched or spiked. Each 2-oz clear glass jar has a Teflon-lined screw cap and is labeled with an individual jar number as well as the above name.

In addition, three concurrent analyses of SRM 1941b Organics in Marine Sediment are recommended. This material can be obtained from the NIST Standard Reference Materials Program (\$652/50 g (dry-mass basis). See the following link for information on ordering on-line: https://www-s.nist.gov/srmors/view_detail.cfm?srm=1941B.

Storage of Materials:

Marine Sediment Material. The Marine Sediment QA10SED01 material should be stored in the dark at temperatures of -15 °C or lower. If only a portion of the contents of a jar is used, that jar should be tightly closed immediately after removal of a subsample to preserve the integrity of the remaining material for later analysis.

Instructions for Use:

You are to analyze Marine Sediment QA10SED01 and SRM 1941b using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry-mass basis]) of the parent polycyclic aromatic hydrocarbon (PAH) compounds, alkylated PAH compounds, and biomarkers currently being determined in your laboratory. A target list of compounds are presented in the following Table; however, participants do not need to quantify all of these compounds and can add additional compounds when reporting data.

The percentage of water in Marine Sediment QA10SED01 should be determined so that the results can be reported on a dry basis. You should have received sufficient material so that you can perform separate determinations for the water content if you do not dry your sediment samples prior to analysis. The amount of material used for each analysis should correspond to the amount (wet basis) of marine sediment that you would typically analyze as prescribed in your protocols. Prior to removing an aliquot of Marine Sediment QA10SED01, you should thaw the sample in the jar and then **stir or otherwise mix it thoroughly**.

You should analyze three samples of Marine Sediment QA10SED01 and at least one or more samples of SRM 1941b using your protocol for marine sediment samples. If time allows, we are asking that you analyze one sample of Marine Sediment QA10SED01 and one sample of SRM 1941b with one batch of laboratory samples; analyze a second sample of each material with another batch; and the third sample with yet another batch. This will allow a more realistic assessment of laboratory precision over a longer term than the assessment obtained when a laboratory places all three samples in the same extraction and cleanup batch and the resulting extracts are analyzed using the same calibration curve, etc.

Reporting of Results:

Please report one result, as if three figures were significant, for each of the analytes quantified in each of the three replicates of the Marine Sediment QA10SED01 and of SRM 1941b. Report results in units of ng/g **dry-mass** basis. Report the date of measurement of each sample in the requested m/d/y format. Also, report the results of your percentage water determinations of Marine Sediment QA10SED01.

If you know that a target or non-target compound is interfering (coeluting) with the determination of a target analyte, please identify this issue by qualifying the data and note the data qualifier used at the bottom of your table of results. Please note that any changes you make to the column or row headings **within** the tables will **not** be seen by the coordinators because only the table entries and comments at the bottom of the tables are automatically transferred to the exercise database.

We prefer that concentration values be reported for each analyte determined. If the measured concentration is below your typical reporting concentration for an analyte in a particular matrix, you can report the number and list the appropriate detection limit, quantification limit, etc. at the bottom of the data table. However, if you need to report non-numerical data please use the following conventions:

NA	"Not analyzed", "not determined"
<"value"	"Less than specified concentration", e.g., <8 ng/g
Other	"Other"; add note of explanation at end of data table, e.g., interference
DL	"Below detection limit" may be used, however, <"value" is preferable

Do not use negative numbers or parentheses to indicate "less than detection limits".

The attached file is an EXCEL file, QA10SED01.xls. If you have any software/hardware conversion problems, please contact Michele Schantz. The data file templates also include places for you to list the surrogate/internal standards and type of calibration curve used, and to provide a brief description of the analyses. Please **do not** add spaces before entering numbers in the table cells and enter them as "numbers" not as "labels". Please **do not** insert any columns or rows **within** the table in the data file. If you wish to include additional data and/or other information or comments, you may add it to the bottom of the data table in the attached file.

Submit your results by **September 24, 2010** as an attached file via e-mail to:

michele.schantz@nist.gov

Further Information:

If you need further information, please contact Michele at the following address or phone numbers:

Michele M. Schantz
NIST
100 Bureau Drive Stop 8392
Gaithersburg, MD 20899-8392

Phone: (301)975-3106
FAX: (301)977-0685

Table: A-1 Preliminary List of Analytes of Interest in the Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment

PAHs

Naphthalene	cis/trans-Decalin
Biphenyl	Dibenzofuran
Acenaphthene	Retene
Acenaphthylene	Benzothiophene
Fluorene	Dibenzothiophene
Phenanthrene	Naphthobenzothiophene
Anthracene	
Fluoranthene	
Pyrene	
Benzo[<i>b</i>]fluorene	
Benz[<i>a</i>]anthracene	
Chrysene	
Triphenylene	
Benzo[<i>b</i>]fluoranthene	
Benzo[<i>j</i>]fluoranthene	
Benzo[<i>k</i>]fluoranthene	
Benzo[<i>a</i>]fluoranthene	
Benzo[<i>e</i>]pyrene	
Benzo[<i>a</i>]pyrene	
Perylene	
Indeno[1,2,3- <i>cd</i>]pyrene	
Benzo[<i>ghi</i>]perylene	
Dibenz[<i>a,h</i>]anthracene	

Alkylated PAHs

1-Methylnaphthalene	C1-Naphthalenes
2-Methylnaphthalene	C2-Naphthalenes
2,6-Dimethylnaphthalene	C3-Naphthalenes
1,6,7-Trimethylnaphthalene	C4-Naphthalenes
1-Methylphenanthrene	
C1-Decalins	C1-Benzothiophenes
C2-Decalins	C2-Benzothiophenes
C3-Decalins	C3-Benzothiophenes
C4-Decalins	C4-Benzothiophenes

Table (cont.)

C1-Fluorenes	C1-Naphthobenzothiophenes
C2-Fluorenes	C2-Naphthobenzothiophenes
C3-Fluorenes	C3-Naphthobenzothiophenes
C4-Fluorenes	C4-Naphthobenzothiophenes
C1-Phenanthrenes/anthracenes	C1-Chrysenes
C2- Phenanthrenes/anthracenes	C2-Chrysenes
C3- Phenanthrenes/anthracenes	C3-Chrysenes
C4- Phenanthrenes/anthracenes	C4-Chrysenes
C1-Dibenzothiophenes	
C2-Dibenzothiophenes	
C3-Dibenzothiophenes	
C4-Dibenzothiophenes	
C1-Fluoranthenes/pyrenes	
C2-Fluoranthenes/pyrenes	
C3-Fluoranthenes/pyrenes	
C4-Fluoranthenes/pyrenes	

Biomarkers

Carbazole
17 α (H)-22,29,30-Tisnorhopane
17 α (H),21 β (H)-30-Norhopane
17 α (H),21 β (H)-Hopane
$\alpha\alpha\alpha$ 20R-Cholestane
$\alpha\beta\beta$ 20R-Cholestane
$\alpha\beta\beta$ 20R 24S-Methylcholestane
$\alpha\alpha\alpha$ 20R 24R-Ethylcholestane
$\alpha\beta\beta$ 20R 24R-Ethylcholestane
17 α (H),21 β (H)-22R-Homohopane
17 α (H),21 β (H)- 22S-Homohopane

Appendix B

Summary of Method Information Provided by the Participating Laboratories

Lab #	Reported	g extracted QA10SE01]	g extracted SRM1941b	% water Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1	9/24/2010	7 wet	2 dry	oven drying at 110 °C until stable mass	Soxhlet	hexane:acetone (1:1 v:v)	16h	mixed samples with hydromatrix in the extraction thimbles
2	9/9/2010	6 wet	substituted NRC-CNR HS-6 Marine Sediment	Shell Vials/Heating Block; Temperature held at >105 °C for 8 h. Samples held at >105 °C overnight to verify no weight change with increased bake time.	Soxhlet	1:1 DCM/Acetone	Overnight (>18 h); 2 - 3 cycles per hour	NA
3	9/17/2010	5 wet	substituted LPTP10-S1	Oven drying at 100 °C.	EPA 3540 (Soxhlet)	DCM	18.5 h	NA
4	9/22/2010	12.5 wet	2540B SM	USEPA Method 3545	acetone/DCM	20 min		
5	9/22/2010	10.2 wet	9.7 dry	2540G	8270 3541	DCM/Acetone		
6	9/22/2010	5 wet	5 dry	Percent dry solids; dried ~4g of sample and measured gravimetrically	Soxhlet extraction	50% hexane/acetone	18 h	
7	9/22/2010	10 wet	10 dry	EPA 160.3 M	EPA 3541	DCM	3 h, 15 min	
8	9/23/2010	10.0 wet	10.0 dry	As per SW-846 guidance	3550B	DCM/Acetone	3 reps at 3min each	
9	9/23/2010	2 wet	1 dry	subsample weighed into aluminum dish and baked at 100 °C for 24 h.	Accelerated Solvent Extraction (ASE)	DCN	10 min.	pressure: 20000psi (13.8 MPa); temp: 100 °C
10	9/23/2010	10.0 wet	2.0 dry	ASTM D2216	SW-846 3550B	DCM	3 times at 3 min each	
11	9/23/2010	5.00 wet	5.00 dry	160.3	3550C	DCM	09.16.10.1500	
12	9/24/2010	10.0 wet	5.0 dry	Standard Methods 2540G	SW-846 3541	DCM:Acetone (1:1)	2 h 20 min	None
13	9/24/2010	5 wet	2 dry	aliquot dried overnight at 110 °C, loss of water calculated	SW 846 Method 3545, ASE	75% DCM:25% acetone	~30 min	
14	9/24/2010	7.5 wet	2.5 dry	EPA 160.3 Modified (drying at 105 °C)	Tumbled for 2 h with 50% DCM/Acetone; 2 additional tumbles with 100% DCM for 2 h each (total extraction time = 6 h)	50% DCM/Acetone; 100% DCM	2 h for 3 cycles	
15	9/24/2010	1.0 wet	5.0 dry	USEPA S0M1.1	3550B	DCM		
16	9/24/2010	10.00 wet	10.00 dry	Aliquot of sample placed in tared weighing pan, weighed, dried in drying oven, and re-weighed.	Orbital shaker table	DCM	1st extraction = 1h; 2nd extraction = 1h; 3rd extraction = 15min	Samples are centrifuged at 1000 rpm (105 rad/sec) after each extraction.
17	9/24/2010	10 wet	5 dry	160.3	Sonication	Acetone/DCM (50/50)	3 min in triplicate	
18	9/26/2010	5.02 wet	5 dry	NA	35580B	DCM/ Acetone	sonication for three sets of 3 min each	NA

Lab #	Reported	g extracted	g extracted	% water	Extraction	Extraction	Extraction	Extraction
		QAl0SE01	SRM 1941b	Determination	Method	Solvent	Time	other
19	9/24/2010	12 & 5 wet	5 dry	SM 2540G - 1 g of sediment used for dry weight. Dried 24 h in an oven at 105 °C.	EPA 3550C, Ultrasonic Extraction	1:1 DCM/Acetone, 3 x 100ml	10 min each	
20	9/24/2010	8.6 wet	10.0 dry	ASTM D2974.87	Sonication	DCM/Acetone	9 min	
21	9/23/2010	3.8 wet						shake the acetone partition 6 times over 90 min then 6 times over 90 min after addition of pet ether
22	9/24/2010	5 wet			Liquid solid phase partitioning extraction with manual shaking	50 mL acetone, 50 mL pet ether		
23	9/24/2010	4.1643 dry	20.0193 dry	EPA SW846 3550C - Approximately 1 g was placed in a preweighed aluminum weighing dish and placed in an oven at 105 °C overnight and until a constant weight was reached.	EPA SW846 3550C - Ultrasonic Extraction	DCM/Acetone (1:1 by volume)		
24	9/24/2010	11.00 wet	5.00 dry	Heated sample at 70 °C until constant weight established	ASE on Dionex 200, 33 mL cells	DCM		
25	9/24/2010	2.5 wet	4 dry	oven drying at 105 °C to constant weight	ASE	100% DCM	1.3 min per sample	1500 psi, 100 °C, 2 static extraction cycles/sample, reduction to 2.0 mL to 3.0 mL using water bath
26	09/27/2010	10 wet	10 dry	Gravimetric	Soxhlet extraction	DCM	21 h	
27	9/28/2010	8.65 wet	1.00 dry	Gravimetric at 104 °C	Sonication (EPA SW3550C)	DCM/Acetone	3 min, three times	
28	10/1/2010	5 wet			Quichers	Acetonitrile	1 min	
29	10/1/2010	10 wet	5 dry	Standard Methods 2540G	Shaker Table - Lab SOP: OP-0.13	DCM	18.5 h	
30	9/23/2010	10.0 wet	10.0 dry	160.4m	EPA 3541	DCM	3 h using automated soxhern	
31	10/6/2010	30.00 wet	30.40 dry	ASTM D 2974-87	SW3550 Sonication	DCM	9/28/2010	
32	10/7/2010	3.60 wet	1.00 dry		Weight 1 g portion and dry overnight at 110 °C. Cool in dessicator and reweigh.	Pressurized Fluid Extraction (Dionex ASE)	3 cycles at 5 minutes each	The cell temperature was 100 °C, equilibration 5 min, static time 5 min, cell pressure was 2000 psi (13.8 Mpa) and there were three cycles
33	10/12/2010	4 wet	2 dry		gravimetric: weigh wet, dry in oven 24 hours at 120 °C, weigh dry	ASE	dichloromethane, acetone	40 min

Lab #	Sample extract cleanup method	Method of quantitation
1	Concentrate extracts to approx 0.5 mL and run through a classic Silica SepPak that was conditioned and then eluted with 20 mL of 20% dichloromethane (DCM) in hexane. Conc extracts again to approx 1 mL and add activated copper powder. Let sit over a weekend and remove approx 0.5 mL of the supernatent for GC/MS analysis	IS
2	1. KOH/Silica Gel 60 column clean-up (5% MtBE in hexanes eluent); 2. Copper-SPE (1000mg) with DCM eluent (Sulfur removal); 3. Size Exclusion Chromatography with DCM Eluent and Phenogel column; 4. 3% deactivated Silica Gel 60 fractionation (25% MtBE in hexanes eluent)	IS
3	none	IS
4	Gel Permeation Chromatography (GPC) - USEPA method 3640	IS
5	NA	IS
6	Gel Permeation Chromatography	IS
7	EPA 3630C Silica Gel - eluted from column with 1:1 Pentane:DCM. Aliphatic and Aromatic fractions collected. EPA 3660A (Mercury) - the mercury cleanup was repeated 3X.	IS
8	3640A	IS
9	Extract solvent changed from dichloromethane to hexane and the extract eluted from 6 g silica gel column with 1:1 pentane:dichloromethane solution.	IS
10	NA	IS
11	None	IS
12	None	IS
13	SW 846:Method 3630, silica gel	IS
14	Silica gel column eluted with 50% DCM/Pentane; Copper cleanup to remove sulfur	IS
15	none.	IS
16	Samples extracts were processed through alumina gravity columns.	IS
17	Filter through sodium sulfate followed by final concentration	IS
18	NA	IS
19	EPA 3660B, Copper sulfur cleanup:EPA 3630C, 6 grams of Silica gel cleanup	IS
20	Method 3660B	IS
21		IS
22		IS
23	EPA SW846 3660B - Activated copper metal powder.	IS
24	Mixed bed Silica/Alumina Column: 20g Silica/10g Alumina; 5% deactivation/1% deactivation	IS
25	Silica/Alumina column chromatography, addition of copper granules for sulfur removal, reduction to 1.0 mL using water bath	IS
26	Column chromatography, PAHs & carbazole - silica gel, 2% deactivated alumina; biomarkers (except carbazole) - silica gel	IS
27	Silica Gel	IS
28	Quechers Dispersive SPE Cleanup	IS
29	Alumina/Silica - NOAA Technical Memorandum MNSE-NWFSC-59, 3/2004	IS
30	Silica Gel	IS
31	NA	IS
32	Size exclusion chromatography followed by alumina SPE eluting with 35% DCM in hexane (volume fraction)	IS
33	GPC SX Biobeads, alumina SPE	IS

Lab #	Instrument	PAHs Phase	Dimensions	Calibration Curve # points	range*
1	GC/MS	DB-17MS	film	4	varied by compound
2	GC/MS-SIM	DB5	30m x 0.25mm, 0.25 μ m film	7	(10-4000) ng/mL
3	GC/MS	DB-5.625	20m x 0.18mm, 0.36 μ m	5	(5-80) ng/uL
4	#3	DB5MS	30m x 0.25mm, 1 μ m film	8	(1-80) mg/L
5	MSD7	ZB-MS-5si	60m x 0.25mm, 0.25 μ m	6	(0.1 - 4.0) ug/mL
6	GC/MS	DB-5	30m x 0.25mm, 0.25 μ m	4	(10 - 500) ng/mL
7	GC/MS-SIM	ZB-5MS	30m (+5m guard) x 0.25mm, 0.25 μ m film	10	(2.0 - 2000) ng/ml
8	Agilent7890 /5975	ZB-5MSi	60m x 0.25mm, 0.25 μ m film	6	(0.02-0.80) ug/mL
9	GC/MS	5% phenylmethyl silicone	25m x 0.2mm, 0.33 μ m film	5	(15-700) ng/ml
10	Hp 5973	DB - 5	60m x 0.25mm, 0.25 μ m	6	(0.1 - 4.0) ug/mL
11	MSME5975	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25 μ m film	6	(0.1-4.0) ppm
12	GC/MS 7890A	ZB5MSi	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/L
13	GC/MS	HP 5 MS	30m x 0.25mm, 0.25 μ m	5	(0.05-20) ppm
14	GC/MS	DB5	30m x 0.25mm, 0.25 μ m	8	(4 - 1000) ng/mL
15	GC/MS	5%PHENYL-95%DIMETHYLPOLYSILOXAN	60m x 0.25mm, 0.25 μ m film	6	(0.1,0.2,0.5,1,2,4) ppm
16	GC-MS	DB-5	60m x 0.25mm, 0.25 μ m	7	(~0.01 to 7) ng/uL
17	6890/5973	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4) ug/mL
18	HM_MS3	ZB-MS-5si	60m x 0.25mm, 0.25 μ m	6	(0.1 - 4.0) ug/mL
19	Agilent 5975C MSD/7890A GC	HP-5MS, 19091S-433	30m x 0.25mm, 0.25 μ m film	7	(0.2 - 50) ug/mL
20	GC/MS	HP-5MS	30m x 0.25mm, 0.5 μ m film	5	(2 - 50) ug/mL
21	GC/MS		20m x 0.18mm, 0.14 μ m	6	(0.5 - 100) pg/uL
22	SEA016	ZB-MS-5Si	60m x 0.25mm, 0.25 μ m	6	(0.1 - 4.0) ug/mL
23	GC/MS	5% diphenyl / 95% dimethyl polysiloxane	60m x 0.25mm, 0.25 μ m film	6	(130 - 50,000) ug/L
24	GC/MS	DB5	30m x 0.25mm, 0.25 μ m	6	(0.02-4) ng/uL
25	GC/MS HP5972	HP-5MS	60m x 0.25mm, 0.25 μ m film	5	(20, 100, 250, 500,1000) ng/mL
26	LR GC/MS	RTX-5	30m x 0.25mm, 0.25 μ m	5	(50-5000) ng/mL
27	NT8 (HP)	ZB-5msi (proprietary)	30m x 0.25mm, 0.5 μ m film	6	0.1 - 10
28	GC/MS	DB-5	60m x 0.25mm, 0.25 μ m	7	(0.015 - 10.5) ng/uL
29	GC/MS-SIM	ZB-5	60m x 0.25mm, 0.25 μ m film	7	(10-20,000) ng/mL
30	GC/MS	ZB-5MS	30m x 0.25mm, 0.25 μ m	10	(2-2000) ppb
31	GC/MS SIM	DB5MS	30m x 0.25mm, 0.5 μ m film	8	(0.01-7.0) ug/mL
32	HP 6890/5973	DB-17 (J&W)	60m x 0.25mm, 0.25 μ m film	6	(2 - 3500) ng/g
33	Agilent	DB-5	30m x 0.25mm, 0.25 μ m	9	3-7500

*Note - units are those provided by laboratory

Lab #	Instrument	Alkylated PAH		Calibration Curve		
		Phase	Dimensions	# points	range*	
1	GC/MS	DB-17MS/ proprietary	60m x 0.25mm, 0.25 μ m film; 20m x 0.18mm, 0.10 μ m film	4	varied by compound	
2	GC/MS-SIM	DB5	30m x 0.25mm, 0.25 μ m film	7	(10-4000) ng/mL	
3	GC/MS	DB-5.625	20m x 0.18mm, 0.36 μ m film	5	(5-80) ng/uL	
4	#3	DB5MS	30m x 0.25mm, 1 μ m film	8	(1-80) mg/L	
5	MSD7	ZB-MS-5si	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL	
6	GC/MS	DB-5	30m x 0.25mm, 0.25 μ m film	4	(10 - 500) ng/mL	
7	GC/MS-SIM	ZB-5MS	30m (+5m guard) x 0.25mm, 0.25 μ m film	10	(2.0 - 2000) ng/ml	
8	Agilent7890/ 5975	ZB-5MSi	60m x 0.25mm, 0.25 μ m film	6	(0.02-0.80) ug/mL	
9	GC/MS	5% phenylmethyl silicone	25m x 0.2mm, 0.33 μ m film	5	(15-700) ng/mL	
10	HP 5973	DB - 5	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL	
11	MSME5975	5% phenylpolydime thylsiloxane	60m x 0.25mm, 0.25 μ m film	6	(0.1-4.0) ppm	
12	GC/MS 7890A	ZB5MSi	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/L	
13	GC/MS	HP 5 MS	30m x 0.25mm, 0.25 μ m film	3 to 5	(0.05-10) ppm	
14	GC/MS	DB5	30m x 0.25mm, 0.25 μ m film	8	(4 - 1000) ng/mL	
15	GC/MS	5%PHENYL- 95% DIMETHYLPO LYSILOXAN	60m x 0.25mm, 0.25 μ m film	6	(0.1,0.2,0.5,1,2,4) ppm	
16	GC-MS	DB-5	60m x 0.25mm, 0.25 μ m film	7	(~0.01 - 7) ng/uL	
17	6890/5973	5% phenylpolydime thylsiloxane	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4) ug/mL	
18	HM MS3	ZB-MS-5si	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL	
19	Agilent 5975C MSD/7890A GC	HP-5MS, 19091S-433	30m x 0.25mm, 0.25 μ m film	7	(0.2 - 50) ug/mL	
20	GC/MS	HP-5MS	30m x 0.25mm, 0.5 μ m film	5	(2 - 50) ug/mL	
21	GC/MS		20m x 0.18mm, 0.14 μ m film	6	(0.5 - 100) pg/uL	
22	SEA016	ZB-MS-5Si	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL	
23	GC/MS	5% diphenyl / 95% dimethyl polysiloxane	60m x 0.25mm, 0.25 μ m film	6	(130 - 25,000) ug/L	
24	GC/MS	DB5	30m x 0.25mm, 0.25 μ m film	6	(0.02 - 4) ng/uL	
25	GC/MS HP5972	HP-5MS	60m x 0.25mm, 0.25 μ m film	5	(20, 100, 250, 500,1000) ng/mL	
26	LR GC/MS	RTX-5	30m x 0.25mm, 0.25 μ m film	1	2000	
27	NT8 (HP)	ZB-5msi (proprietary)	30m x 0.25mm, 0.5 μ m film	6	0.1 to 10	
28	NA	NA	NA	NA	NA	
29	GC/MS-SIM	ZB-5	60m x 0.25mm, 0.25 μ m film	7	(10-20,000) ng/mL	
30	GC/MS	ZB-5MS	30m x 0.25mm, 0.25 μ m film	10	(2-2000) ppb	
31	GC/MS SIM	DB5MS	30m x 0.25mm, 0.5 μ m film	8	(0.01-7.0) ug/mL	
32	HP 6890/5973	DB-17 (J&W)	60m x 0.25mm, 0.25 μ m film	6	(0.8 - 1000) ng/g	
33	Agilent	DB5	30m x 0.25mm, 0.25 μ m film	6	10-5000	

*Note - units are those provided by laboratory

Lab #	Instrument	Biomarkers		Calibration Curve	
		Phase	Dimensions	# points	range*
1	GC/MS	DB-17MS	60m x 0.25mm, 0.25 μ m film	4	varied by compound
2	GC/MS-SIM	DB5	30m x 0.25mm, 0.25 μ m film	7	(10-4000) ng/mL
3	NA	NA	NA	NA	NA
4	NA	NA	NA	NA	NA
5	MSD7	ZB-MS-5si	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL
6	GC/MS	DB-5	30m x 0.25mm, 0.25 μ m film	3	(100 - 500) ng/mL
7	NA	NA	NA	NA	NA
8	Agilent 7890/5975	ZB-5MSi	60m x 0.25mm, 0.25 μ m film	6	(0.02-0.80) ug/mL
9	GC/MS	5% phenylmethyl silicone	25m x 0.2mm, 0.33 μ m film	5	(10-5000) ng/mL
10	HP 5973	DB - 5	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL
11	MSME5975	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25 μ m film	6	(0.1-4.0) ppm
12	GC/MS 7890A	ZB5MSi	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/L
13	NA	NA	NA	NA	NA
14	GC/MS	DB5	30m x 0.25mm, 0.25 μ m film	6	Varies - used NIST 2266 diluted 1:200, 1:100, 1:40, 1:20, 1:10, 1:4
15	GC/MS	5%PHENYL-95% DIMETHYLPOLYSILOXAN	60m x 0.25mm, 0.25 μ m film	6	(0.1,0.2,0.5,1,2,4) ppm
16	GC-MS	DB-5	60m x 0.25mm, 0.25 μ m film	7	(~0.01 to 7) ng/uL
17	6890/5973	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4) ug/mL
18	HM MS3	ZB-MS-5si	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL
19	Agilent 5975C MSD/7890 A GC	HP-5MS, 19091S-433	30m x 0.25mm, 0.25 μ m film	7	(0.2 - 50) ug/mL
20	GC/MS	HP-5MS	30m x 0.25mm, 0.5 μ m film	5	(2 - 50) ug/mL
21	NA	NA	NA	NA	NA
22	SEA016	ZB-MS-5Si	60m x 0.25mm, 0.25 μ m film	6	(0.1 - 4.0) ug/mL
23	GC/MS	5% diphenyl / 95% dimethyl polysiloxane	60m x 0.25mm, 0.25 μ m film	6	(130 - 25,000) ug/L
24	NA	NA	NA	NA	NA
25	NA	NA	NA	NA	NA
26	LR GC/MS	RTX-5	30m x 0.25mm, 0.25 μ m film	1	(500 - 11500) ng/mL
27	NA	NA	NA	NA	NA
28	NA	NA	NA	NA	NA
29	GC/MS-SIM	ZB-5	60m x 0.25mm, 0.25 μ m film	6	(10-10,000) ng/mL
30	NA	NA	NA	NA	NA
31	GC/MS SIM	DB5MS	30m x 0.25mm, 0.5 μ m film	8	(0.01-7.0) ug/mL
32	NA	NA	NA	NA	NA
33	NA	NA	NA	NA	NA

*Note - units are those provided by laboratory

Lab #	IS/surrogate added prior to extraction	PAHs	corrected for recovery?
		added prior to analysis	Used?
1	naphthalene-d8; biphenyl-d10; acenaphthalene-d10; phenanthrene-d10; fluoranthene-d10; pyrene-d10; B[a]A-d12; B[a]P-d12; perylene-d12; B[ghi]P-d12; DB[a,h]A-d14	x	
2	deuterated priority pollutant PAHs (16)	x	
3	2-fluorophenol, phenol-d6, 2-chlorophenol-d4, 1,2-dichlorobenzene-d4, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, terphenyl-d14	x	
4	nitrobenzene-d5; fluorobiphenyl; p-Terphenyl-d14	x	
5	Nitrobenzene-d5; 2- Fluorobiphenyl; Terphenyl-d14		
6	Acenaphthene-d10; Acenaphthylene-d8; Anthracene-d10, Benz[a]Anthracene-d12, Benzol[b]Fluoranthene-d12, Benzol[g,h,i]Perylene-d12, Benzol[a]Perylene-d12, Dibenz[a,h]Anthracene-d14, Fluoranthene-d10, Fluorene-d10, Indeno[1,2,3-cd]Pyrene-d12, Naphthalene-d8, Phenanthrene-d10, Pyrene-d10	x	
7	Fluorene-d10, Fluoranthene-d10, Terphenyl-d14	x	
8	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		
9	d8Naph, d10Ace, d10Phen, d12Chry, d12B-a-P, d12Pery	x	
10	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		
11	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		
12	Surrogates: Nitrobenzene-d5; 2-Fluorobiphenyl; Terphenyl-d14		
13		x	
14	Naphthalene-d8; Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12	x	yes
15	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		
16	Naphthalene-d8; Acenaphthene-d10, Phenanthrene-d10, Benzo[a]Pyrene-d12	x	
17	2-fluorobiphenyl, nitrobenzene-d5, terphenyl-d14	x	no
18	Nitrobenzene-d5; 2- Fluorobiphenyl; Terphenyl-d14	x	yes

Lab #	IS/surrogate added prior to extraction	PAHs	corrected for recovery?
19	Surrogates = nitrobenzene - d5, 2-Fluorobiphenyl, terphenyl - d14	Used? IS = naphthalene - d8, acenaphthene - d10, phenanthrene - d10, chrysene - d12, perylene - d12	Used? x no
20	Nitrobenzene-d5, Terphenyl-d12 (S), 2-Fluorobiphenyl	Naphthalene-d8 Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12	x yes
21	Fluorene-d10, Fluoranthene-d10	Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x no
22	2-Fluorobiphenyl; Nitrobenzene-d5; Terphenyl-d14	Acenaphthene-d10; Chrysene-d12; Naphthalene-d12; Phenanthrene-d10	x yes
23	Nitrobenzene d5/p Terphenyl d14/2-Fluorobiphenyl	1,4-Dichlorobenzene d4/Naphthalene d8/Acenaphthene d10/Phenanthrene d10/Chrysene d12/Perylene d12	x no
24	Naphthalene-d8; Acenaphthene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	Fluorene-d10; Benzo(a)pyrene d-12	
25	SU-Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	IS-Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12	x yes
26	d8-naphthalene, d10-2-methylnaphthalene, d10-biphenyl, d12-2,6-dimethylnaphthalene, d8-acenaphthylene, d10-phenanthrene, d10-fluoranthene, d12-benz[a]anthracene, d12-ehrycene, d12-benzol[b,k]fluoranthenes, d12-benzol[a]pyrene, d12-perylene, d14-dibenz[a,h]anthracene, d12-indeno[1,2,3-cd]perylene, d12-benzol[ghi]perylene	d10-acenaphthene, d10-pyrene, d12-benzol[e]pyrene, used to quantify labeled surrogates only.	
27		d10-Fluorene, d10-Pyrene, d12-Benzo(a)Pyrene	x no
28		Acenaphthene D10, Phenanthrene D10, Chrysene D12	x no
29	Surrogates: Naphthalene-d8, Phenanthrene-d10, Benzo[a]pyrene-d12	IS: Acenaphthene-d10, Chrysene-d12	x yes
30	surrogates only	Internal standards	x no
31	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14	Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x no
32	naphthalene-d8, biphenyl-d10, acenaphthene-d10, fluoranthene-d10, pyrene-d12, benz[a]anthracene-d12, benzo[a]pyrene-d12, perylene-d12, dibenzo[a,h]anthracene-d14, benzo[ghi]perylene-d12	d8-Naphthalene, d8-1-Methylnaphthalene, d8-Acenaphthylene, d10-Acenaphthene, d10-Fluorene, d10-Phenanthrene, d10-Anthracene, d10-Fluoranthene, d10-Pyrene, d12-Benz(a)anthracene, d12-Chrysene, d12-Benzo(b)fluoranthene, d12-Benzo(k)fluoranthene, d12-Benzo(e)pyrene, d12-Benzo(a)pyrene, d12-Perylene, d12-Benzo(g,h,i)perylene	x d14-p-Terphenyl

Lab #	IS/surrogate added prior to extraction	Alkylated PAHs		corrected for recovery?
		Used?	added prior to analysis	
1	naphthalene-d8; biphenyl-d10; acenaphthalene-d10; phenanthrene-d10; fluoranthene-d10; pyrene-d10; B[a]A-d12; B[a]P-d12; perylene-d12; B[ghi]P-d12; DB[a,h]A-d14	x		
2	deuterated priority pollutant PAHs (16)	x	dl 0-2-methylnaphthalene and dl 2-benz(o)e)pyrene	
3	2-fluorophenol, phenol-d6, 2-chlorophenol-d4, 1,2-dichlorobenzene-d4, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, terphenyl-d14	x	1,4-dichlorobenzene-d4, naphthalene-d8, acenaphthalene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	no
4	nitrobenzene-d5; fluorobiphenyl; p-Terphenyl-d14	x	naphthalene-d8; acenaphthalene-d10; phenanthrene-d10, Chrysene-d12; perylene-d12	no
5	Nitrobenzene-d5; 2- Fluorobiphenyl; Terphenyl-d14	x	Naphthalene-d8; Acenaphthene-d10; Chrysene-d12; Perylene-d12	z
6	Acenaphthene-d10, Acenaphthylene-d8, Anthracene-d10, Benz[a]Anthracene-d12, Benzol[b]Fluoranthene-d12, Benzol[k]Fluoranthene-d12, Benzo[g,h,i]Perylene-d12, Benzo[a]Pyrene-d12, Dibenz[a,h]Anthracene-d14, Fluoranthene-d10, Fluorene-d10, Indeno[1,2,3-cd]Pyrene-d12, Naphthalene-d8, Phenanthrene-d10, Pyrene-d10	x		yes
7	Fluorene-d10, Fluoranthene-d10, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x
8	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	no
9	d8Naph, d10Ace, d10Phen, d12Chry, d12B-a-P, d12Pery	x	hexamethylbenzene	no
10	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	no
11	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x
12	Surrogates: Nitrobenzene-d5; 2-Fluorobiphenyl; Terphenyl-d14	x	IS: Naphthalene-d8; Acenaphthene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	no
13		x	Nd8, Ad10, Pd10, Cd12, Pd12	no
14	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	JUST PRIOR: Fluorene-d10, Pyrene-d10, Benz(o)aplyrene-d12	yes
15	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d8, Phenanthrene-d10, Chrysene-d12	x
16	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Benzo[a]pyrene-d12	x	Fluorene-d10, Chrysene-d12	yes
17	2-fluorobiphenyl, nitrobenzene-d5, terphenyl-d14	x	Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	no
18	Nitrobenzene-d5; 2- Fluorobiphenyl; Terphenyl-d14	x	Naphthalene-d8; Acenaphthene-d10, Chrysene-d12; Perylene-d12	yes

Lab #			Alkylated PAHs		corrected for recovery?
	IS/surrogate added prior to extraction				
19	Surrogates = nitrobenzene - d5, 2-Fluorobiphenyl, terphenyl - d14	Used? IS = naphthalene - d8, acenaphthene - d10, phenanthrene - d10, chrysene - d12, perylene - d12		Used?	
20	Nitrobenzene-d5, Terphenyl-d12 (S), 2-Fluorobiphenyl	Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	x	yes
21	1-methyl Naphthalene-d10	Acenaphthene-d10; Chrysene-d12; Naphthalene-d8; Perylene-d12;	x	x	no
22	2-Fluorobiphenyl; Nitrobenzene-d5; Terphenyl-d14	Phenanthrene-d10; 1,4-Dichlorobenzene d4/Naphthalene d8/Acenaphthene d10/Phenanthrene d10/Chrysene d12/Perylene d12	x	x	yes
23	Nitrobenzene d5/p Terphenyl d14/2-Fluorobiphenyl	x	x	x	no
24	Naphthalene-d8; Acenaphthene-d10; Phenanthrene-d10; Chrysene-d12	Fluorene-d10; Benzo(a)pyrene d12	x	x	
25	SU-Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12, d10-2-methylnaphthalene, d12-2,6-dimethylnaphthalene, d8-acenaphthylene, d10-phenanthrene, d10-fluoranthene, d12-chrysene	IS-Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12, d10-acenaphthene, d10-pyrene, d12-benzo[e]pyrene, used to quantify labeled surrogates only.	x	x	yes
26		d10-Fluorene, d10-Pyrene, d12-Benzo(a)Pyrene	x	x	no
27					
28	NA				
29	Surrogates: Naphthalene-d8, Phenanthrene-d10, Benzo[a]pyrene-d12	IS; Acenaphthene-d10, Chrysene-d12	x	x	yes
30	surrogates only	Internal standards	x	x	no
31	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14	Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	x	no
32	Nonalkyl parent				
33	d8-Naphthalene, d8-1-Methylnaphthalene, d10-Acenaphthene, d10-Fluorene, d8-Dibenzothiophene, d10-Anthracene, d10-Fluoranthene, d12-chrysene, d12-Benzo(e)pyrene	d14-d-Terphenyl	x	x	

Lab #	IS/surrogate added prior to extraction	Used?	Biomarkers	Used?	corrected for recovery?
1a	naphthalene-d8;biphenyl-d10, acenaphthalene-d10, phenanthrene-d10, fluoranthene-d10, pyrene-d10, B[a]A-d12; B[a]P-d12; perylene-d12; B[ghi]P-d12;DB[a,h]A-d14	x	added prior to analysis		
2	NA				
3	2-fluorophenol, phenol-d6, 2-chlorophenol-d4, 1,2-dichlorobenzene-d4, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, terphenyl-d14		1,4-dichlorobenzene-d4, naphthalene-d8, acenaphthalene-d10, phenanthrene-d10, chrysene-d10, perylene-d12	x	no
4	NA		NA		
5	Nitrobenzene-d5, 2- Fluorobiphenyl; Terphenyl-d14		Naphthalene-d8; Acenaphthalene-d10; Chrysene-d12; Perylene-d12	x	yes
6	Acenaphthalene-d10, Acenaphthylene-d8, Anthracene-d10, Benz[a]Anthracene-d12, Benzo[b]Fluoranthene-d12, Benzo[k]Fluoranthene-d12, Benzo[g,h,i]Perylene-d12, Benzo[a]Pyrene-d12, Chrysene-d12, Dibenz[a,h]Anthracene-d14, Fluoranthene-d10, Fluorene-d10, Indeno[1,2,3-cd]Pyrene-d12, Naphthalene-d8, Phenanthrene-d10, Pyrene-d10	x			
7	NA				
8	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d10	x	no
9	Trim (17 α -21 β -trisnorhopane), H30 (17 α ,21 β -hopane), C27S (aaal20S)-cholestane	x	dodecylcyclohexane		
10	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d10	x	no
11	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	
12	Surrogates: Nitrobenzene-d5; 2-Fluorobiphenyl; Terphenyl-d14		IS; Naphthalene-d8; Acenaphthalene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	x	no
13	NA				
14	5-alpha Androstan		JUST PRIOR: Benzodapryene-d12	x	yes
15	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d8, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	
16	5 β (H)-Cholane		Chrysene-d12	x	yes
17	2-fluorobiphenyl, nitrobenzene-d5, terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
18	Nitrobenzene-d5; 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8; Acenaphthalene-d10; Chrysene-d12; Perylene-d12	x	yes

Lab #	IS/surrogate added prior to extraction	Biomarkers		corrected for recovery?
		Used?	IS = phenanthrene-d10 added prior to analysis	
19	Surrogates = terphenyl - d14			x no
20	Nitrobenzene-d5, Terphenyl-d12 (S), 2-Fluorobiphenyl		Naphthalene d8 Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12	x yes
21	NA			
22	2-Fluorobiphenyl; Nitrobenzene-d5; Terphenyl-d14		Acenaphthene-d10; Chrysene-d12; Naphthalene-d8; Perylene-d12; Phenanthrene-d10	x yes
23	Nitrobenzene d5/p Terphenyl d14/p Fluorobiphenyl		1,4 Dichlorobenzene d4; Naphthalene d8/Acenaphthene d10/Phenanthrene d10/Chrysene d12/Perylene d12	x no
24	NA			
25	NA			
26	d10-phenanthrene, d50-tetracosane	x	d10-p-xene, used to quantify labeled surrogates only	
27	NA			
28	NA			
29	Surrogates: Naphthalene-d8, Phenanthrene-d10, Benzo[a]pyrene-d12	x	IS: Acenaphthene-d10, Chrysene-d12.	x yes
30	NA			
31	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x no
32	NA			
33	NA			

PAHs - IS/surrogate used for quantitation

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6
naphthalene	naphthalene-d8	d8-naphthalene	naphthalene-d8	naphthalene_d8	Naphthalene- d8	naphthalene-d8
biphenyl	biphenyl-d10	d10-acenaphthylene			Acenaphthene- d10	naphthalene-d8
acenaphthene	acenaphthene-d10	d10-acenaphthene	acenaphthene-d10	acenaphthalene-d10	Acenaphthene- d10	acenaphthene-d10
acenaphthylene	acenaphthene-d10	d10-acenaphthylene	acenaphthene-d10	acenaphthalene-d10	Acenaphthene- d10	acenaphthylene-d8
fluorene	phenanthrene-d10	d10-fluorene	acenaphthene-d10	acenaphthalene-d10	Acenaphthene- d10	fluorene-d10
phenanthrene	phenanthrene-d10	d10-phenanthrene	phenanthrene-d10	phenanthrene-d10	Phanthrene- d10	phenanthrene-d10
anthracene	phenanthrene-d10	d10-anthracene	phenanthrene-d10	phenanthrene-d10	Phanthrene- d10	anthracene-d10
fluoranthene	fluoranthene-d10	d10-fluoranthene	phenanthrene-d10	phenanthrene-d10	Phanthrene- d10	fluoranthene-d10
pyrene	pyrene-d10	d10-pyrene	chrysene-d12	chrysene-d12	Chrysene- 12	pyrene-d10
benzo[b]fluorene	NA				NA	
benz[a]anthracene	B[a]A-d12	d12-benz[a]anthracene	chrysene-d12	chrysene-d12	Chrysene- 12	benz[a]anthracene-d12
chrysene	B[a]A-d12	d12-chrysene	chrysene-d12		Chrysene- 12	chrysene-d12
triphenylene	B[a]A-d12				NA	
benzo[b]fluoranthene	B[a]P-d12	d12-benzo[b]fluoranthene	perylene-d12	perylene-d12	Chrysene- 12	benzo[b]fluoranthene-d12
benzo[j]fluoranthene	B[a]P-d12				NA	
benzo[k]fluoranthene	B[a]P-d12	d12-benzo[k]fluoranthene	perylene-d12	perylene-d12	Chrysene- 12	benzo[k]fluoranthene-d12
benzo[a]fluoranthene	B[a]P-d12				NA	
benzo[e]pyrene	B[a]P-d12	d12-benzo[e]pyrene			Chrysene- 12	benzo[e]pyrene-d12
benzo[a]pyrene	B[a]P-d12	d12-benzo[a]pyrene	perylene-d12	perylene-d12	Chrysene- 12	benzo[a]pyrene-d12
perylene	perylene-d12	d12-benzo[a]pyrene			Chrysene- 12	benzo[a]pyrene-d12
indeno[1,2,3-cd]pyrene	B[ghi]P-d12	d12-indeno[1,2,3-cd]pyrene	perylene-d12	perylene-d12	Chrysene- 12	indeno[1,2,3-cd]pyrene-d12
benzo[ghi]perylene	B[ghi]P-d12	d12-benzo[ghi]perylene	perylene-d12	perylene-d12	Chrysene- 12	benzo[ghi]perylene-d12
dibenz[a,h]anthracene	DB[a,h]A-d14	d14-dibenz[a,h]anthracene	perylene-d12	perylene-d12	Chrysene- 12	dibenz[a,h]anthracene-d14
cis/trans-decalin	NA				NA	
dibenzofuran	NA		perylene-d12	acenaphthalene-d10	NA	acenaphthylene-d8
retene	NA				NA	
benzothiophene	NA	d8-naphthalene			NA	
dibenzothiophene	fluoranthene-d10	d10-fluorene			Phanthrene- d10	fluorene-d10
naphthobenzothiophene	NA				NA	

PAHs - IS/surrogate used for quantitation

	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
naphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Naphthalene-d8
biphenyl	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
acenaphthene	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
acenaphthylene	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
fluorene	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
phenanthrene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
anthracene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
fluoranthene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
pyrene	Chrysene-d12/Fluoranthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[b]fluorene	Chrysene-d12/Fluoranthene-d10	Chrysene-d12		NA		
benz[a]anthracene	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
chrysene	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
triphenylene	Chrysene-d12/Terphenyl-d14	NA		NA		
benzo[b]fluoranthene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[b]fluoranthene	Perylene-d12/Terphenyl-d14	NA		NA		
benzo[k]fluoranthene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[a]fluoranthene	Perylene-d12/Terphenyl-d14	NA		NA		
benzo[c]pyrene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[a]pyrene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
perylene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Perylene	Chrysene-d12	chrysene-d12	Chrysene-d12
indeno[1,2,3-cd]pyrene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[ghi]perylene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
dibenz[a,h]anthracene	Perylene-d12/Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
cis/trans-decalin	Naphthalene-d8/Fluorene-d10	NA		NA		
dihenzofuran	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10		Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
retene	Chrysene-d12/Fluoranthene-d10	NA		NA		
benzothiophene	Naphthalene-d8/Fluorene-d10	NA		NA		
dibenzothiophene	Phenanthrene-d10/Fluoranthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
naphthobenzothiophene	Chrysene-d12/Terphenyl-d14	NA		NA		

PAHs - IS/surrogate used for quantitation

	Lab 13	Lab 14	Lab 15	Lab 16	Lab 17	Lab 18
naphthalene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Naphthalene-d8
biphenyl	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Acenaphthene-d10
acenaphthene	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenaphthene-d10
acenaphthylene	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenaphthene-d10
fluorene	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenaphthene-d10
phenanthrene	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
anthracene	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
fluoranthene	Phenanthrene-d10	Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
pyrene	Phenanthrene-d10	Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chrysene-12
benzo[b]fluorene	Phenanthrene-d10	Chrysene-d12				NA
benz[a]anthracene	Chrysene-d12	Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chrysene-12
chrysene	Chrysene-d12	Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chrysene-12
triphenylene					Chrysene-d12	NA
benzo[b]fluoranthene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
benzo[f]fluoranthene						NA
benzo[k]fluoranthene	Chrysene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
benzo[a]fluoranthene		Perylene-d12				NA
benzo[e]pyrene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
benzo[a]pyrene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
perylene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
indeno[1,2,3-cd]pyrene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
benzo[ghi]perylene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
dibenz[a,h]anthracene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chrysene-12
cis/trans-decalin	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
dibenzofuran	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	NA
retene		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
benzothiophene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
dibenzothiophene	Acenaphthene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Acenaphthalene-d10	Phenanthrene-d10
naphthobenzothiophene		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA

PAHs - IS/surrogate used for quantitation

	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24
naphthalene	Naphthalene-d10	naphthalene-d8 (IS)	Naphthalene-d8			Naphthalene-d8
biphenyl	Acenaphthene-d10	Nitrobenzene-d5 (S)	Naphthalene-d8			Acenaphthene-d10
acenaphthene	Acenaphthene-d10		Acenaphthene-d10			Acenaphthene-d10
acenaphthylene	Acenaphthene-d10		Naphthalene-d8			Acenaphthene-d10
fluorene	Acenaphthene-d10		Acenaphthene-d10			Acenaphthene-d10
phenanthrene	Phenanthrene-d10	Acenaphthene-d10 (IS)	Phenanthrene-d10			Phenanthrene-d10
anthracene	Phenanthrene-d10		Phenanthrene-d10			Phenanthrene-d10
fluoranthene	Phenanthrene-d10		Phenanthrene-d10			Phenanthrene-d10
pyrene	Chrysene-d12	2-Fluorobiphenyl (S)	Phenanthrene-d10			Phenanthrene-d10
benzo[b]fluorene						NA
benz[a]anthracene	Chrysene-d12		Phenanthrene-d10			Chrysene-d12
chrysene	Chrysene-d12	Phenanthrene-d10 (IS)	Chrysene-d12			Chrysene-d12
triphenylene			Chrysene-d12			NA
benzo[b]fluoranthene	Perylene-d12		Chrysene-d12			Chrysene-d12
benzo[j]fluoranthene						NA
benzo[k]fluoranthene	Perylene-d12		Chrysene-d12			Chrysene-d12
benzo[a]fluoranthene						NA
benzo[e]pyrene			Chrysene-d12			Chrysene-d12
benzo[a]pyrene	Perylene-d12		Chrysene-d12			Chrysene-d12
perylene		Chrysene-d12 (IS)	Perylene-d12			Perylene-d12
indeno[1,2,3-cd]pyrene	Perylene-d12	Terphenyl-d12 (S)	Perylene-d12			Chrysene-d12
benzo[ghi]perylene	Perylene-d12		Perylene-d12			Chrysene-d12
dibenz[a,h]anthracene	Perylene-d12		Perylene-d12			Chrysene-d12
cis/trans-decalin						NA
dibenzofuran	Acenaphthene-d10					NA
retene						NA
benzothiophene						NA
dibenzothiophene	Phenanthrene-d10		Acenaphthene-d10			Phenanthrene-d10
naphthobenzothiophene						NA

PAHs - IS/surrogate used for quantitation

	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30
naphthalene	Fluorene-d10/Phenanthrene-d10	d8-naphthalene	d10-fluorene	Acenaphthene D10	Acenaphthene-d10	Naphthalene-d8
biphenyl	Fluorene-d10/Phenanthrene-d10	d10-biphenyl	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
acenaphthene	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene	Acenaphthene D10	Acenaphthene-d10	Acenaphthene-d10
acenaphthylene	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene	Acenaphthene D10	Acenaphthene-d10	Acenaphthene-d10
fluorene	Fluorene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene	Acenaphthene D10	Acenaphthene-d10	Acenaphthene-d10
phenanthrene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene	Phenanthrene D10	Acenaphthene-d10	Phenanthrene-d10
anthracene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
fluoranthene	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
pyrene	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Chrysene-d12
benzo[b]fluorene	Pyrene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
benzo[a]anthracene	Pyrene-d10/Phenanthrene-d10	d12-benzo[a]anthracene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
chrysene	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
triphenylene	Pyrene-d10/Phenanthrene-d10	NA			Chrysene-d12	
benzo[b]fluoranthene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-benzo[b]fluoranthene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
benzo[g]fluoranthene	Benz(a)pyrene-d12/Phenanthrene-d10				Chrysene-d12	
benzo[k]fluoranthene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-benzo[k]fluoranthene			Chrysene-d12	Perylene-d12
benzo[a]fluoranthene	Benz(a)pyrene-d12/Phenanthrene-d10	NA			Chrysene-d12	
benzo[e]pyrene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-benzo[e]pyrene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
benzo[a]pyrene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-benzo[a]pyrene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
perylene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-perylene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
indeno[1,2,3-cd]pyrene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-indeno[1,2,3-cd]pyrene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
benzo[ghi]perylene	Benz(a)pyrene-d12/Phenanthrene-d10	d12-benzo[ghi]perylene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
dibenz[a,h]anthracene	Benz(a)pyrene-d12/Phenanthrene-d10	d14-dibenz[a,h]anthracene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
cis/trans-decalin	Fluorene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
dibenzofuran	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	Acenaphthene-d10
retene	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	
benzothiophene	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
dibenzothiophene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
naphthobenzothiophene	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	

PAHs - IS/surrogate used for quantitation

	Lab 31	Lab 32	Lab 33
naphthalene	Naphthalene-d8	naphthalene <i>d</i> ₈	d8-Naphthalene
biphenyl	Acenaphthalene-d10	biphenyl <i>d</i> ₁₀	d8-Naphthalene
acenaphthene	Acenaphthalene-d10	acenaphthene <i>d</i> ₈	d10Acenaphthene
acenaphthylene	Acenaphthalene-d10	acenaphthylene <i>d</i> ₈	d8Acenaphthylene
fluorene	Acenaphthalene-d10	acenaphthene <i>d</i> ₁₀	d10Fluorene
phenanthrene	Phenanthrene-d10	phenanthrene <i>d</i> ₁₀	d10-Phenanthrene
anthracene	Phenanthrene-d10	phenanthrene <i>d</i> ₁₀	d10-Anthracene
fluoranthene	Phenanthrene-d10	phenanthrene <i>d</i> ₁₀	d10-Fluoranthene
pyrene	Chrysene-d12	pyrene <i>d</i> ₁₂	d10-Pyrene
benzo[b]fluorene	Chrysene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benzo(b)fluoranthene
benz[a]anthracene	Chrysene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benz(a)anthracene
chrysene	Chrysene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Chrysene
triphenylene	Chrysene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Chrysene
benzo[b]fluoranthene	Perylene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benzo(b)fluoranthene
benzo[j]fluoranthene	Perylene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benzo(k)fluoranthene
benzo[k]fluoranthene	Perylene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benzo(k)fluoranthene
benzo[a]fluoranthene	Perylene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benzo(e)pyrene
benzo[e]pyrene	Perylene-d12	benz[a]anthracene <i>d</i> ₁₂	d12-Benzo(e)pyrene
benzo[a]pyrene	Perylene-d12	benzo[a]pyrene <i>d</i> ₁₂	d12benzo(a)pyrene
perylene	Perylene-d12	perylene <i>d</i> ₁₂	d12perylene
indeno[1,2,3-cd]pyrene	Perylene-d12	dibenzo[a,h]anthracene <i>d</i> ₁₄	d12benzo(ghi)perylene
benzo[ghi]perylene	Perylene-d12	dibenzo[a,h]anthracene <i>d</i> ₁₄	d12benzo(ghi)perylene
dibenzo[a,h]anthracene	Perylene-d12		d12benzo(ghi)perylene
cis/trans-decalin	Naphthalene-d8		d8-Naphthalene
dibenzofuran	Acenaphthalene-d10		d10Acenaphthene
retene	Chrysene-d12	fluoranthene <i>d</i> ₁₀	d10-Pyrene
benzothiophene	Naphthalene-d8		d8-Naphthalene
dibenzothiophene	Acenaphthalene-d10	phenanthrene <i>d</i> ₁₀	d10-Phenanthrene
naphthobenzothiophene	Chrysene-d12		

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6
1-methylnaphthalene	naphthalene-d8	d8-naphthalene			Naphthalene-d8	naphthalene-d8
2-methylnaphthalene	naphthalene-d8	d8-naphthalene	naphthalene-d8	naphthalene-d8	Naphthalene-d8	naphthalene-d8
2,6-dimethylnaphthalene	naphthalene-d8				NA	naphthalene-d8
1,6,7-trimethylnaphthalene	naphthalene-d8				NA	acenaphthylene-d8
1-methylphenanthrene	phenanthrene-d10				NA	anthracene-d10
C1-decalins	NA				NA	
C2-decalins	NA				NA	
C3-decalins	NA				NA	
C4-decalins	NA				NA	
C1-naphthalenes	naphthalene-d8				Naphthalene-d8	
C2-naphthalenes	naphthalene-d8				Naphthalene-d8	
C3-naphthalenes	naphthalene-d8				Naphthalene-d8	
C4-naphthalenes	naphthalene-d8				Naphthalene-d8	
C1-benzothiophenes	NA				NA	
C2-benzothiophenes	NA				NA	
C3-benzothiophenes	NA				NA	
C4-benzothiophenes	NA				NA	
C1-fluorenes	phenanthrene-d10				Acenaphthene-d10	
C2-fluorenes	phenanthrene-d10				Acenaphthene-d10	
C3-fluorenes	phenanthrene-d10				Acenaphthene-d10	
C1-phenanthrenes/anthracenes	phenanthrene-d10				Phanthrene-d10	
C2-phenanthrenes/anthracenes	phenanthrene-d10				Phanthrene-d10	
C3-phenanthrenes/anthracenes	phenanthrene-d10				Phanthrene-d10	
C4-phenanthrenes/anthracenes	phenanthrene-d10				Phanthrene-d10	
C1-dibenzothiophenes	phenanthrene-d10				Phanthrene-d10	
C2-dibenzothiophenes	phenanthrene-d10				Phanthrene-d10	
C3-dibenzothiophenes	phenanthrene-d10				Phanthrene-d10	
C4-dibenzothiophenes	phenanthrene-d10				Phanthrene-d10	
C1-fluoranthenes/pyrenes	fluoranthene-d10				Chrysene-12	
C2-fluoranthenes/pyrenes	fluoranthene-d10				Chrysene-12	
C3-fluoranthenes/pyrenes	fluoranthene-d10				Chrysene-12	
C4-fluoranthenes/pyrenes	fluoranthene-d10				NA	
C1-naphthobenzothiophenes	NA				NA	
C2-naphthobenzothiophenes	NA				NA	
C3-naphthobenzothiophenes	NA				NA	
C4-naphthobenzothiophenes	NA				NA	
C1-chrysenes	B[a]A-d12				Chrysene-12	
C2-chrysenes	B[a]A-d12				Chrysene-12	
C3-chrysenes	B[a]A-d12				Chrysene-12	
C4-chrysenes	B[a]A-d12				NA	

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
1-methylnaphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Naphthalene-d8
2-methylnaphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
2,6-dimethylnaphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
1,6,7-trimethylnaphthalene	Naphthalene-d8/Fluorene-d10	Acenaphthene-d10		Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
1-methylphenanthrene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
C1-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		
C2-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		
C3-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		
C4-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		
C1-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Naphthalene-d8
C2-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
C3-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
C4-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Phenanthrene-d10
C1-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		
C2-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		
C3-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		
C4-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		
C1-fluorenes	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
C2-fluorenes	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
C3-fluorenes	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
C1-phenanthrenes/anthracenes	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
C2-phenanthrenes/anthracenes	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
C3-phenanthrenes/anthracenes	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Chrysene-d12
C4-phenanthrenes/anthracenes	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Chrysene-d12
C1-dibenzothiophenes	Phenanthrene-d10/Fluoranthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Phenanthrene-d10
C2-dibenzothiophenes	Phenanthrene-d10/Fluoranthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Phenanthrene-d10
C3-dibenzothiophenes	Phenanthrene-d10/Fluoranthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Phenanthrene-d10
C4-dibenzothiophenes	Phenanthrene-d10/Fluoranthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Chrysene-d12
C1-fluoranthenes/pyrenes	Phenanthrene-d10/Fluoranthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
C2-fluoranthenes/pyrenes	Phenanthrene-d10/Fluoranthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
C3-fluoranthenes/pyrenes	Phenanthrene-d10/Fluoranthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
C4-fluoranthenes/pyrenes	Phenanthrene-d10/Fluoranthene-d10	NA	d10-Phenanthrene	NA	chrysene-d12	
C1-naphthobenzenothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		
C2-naphthobenzenothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		
C3-naphthobenzenothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		
C4-naphthobenzenothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		
C1-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
C2-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
C3-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
C4-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12

Alkylated PAHs - IS/surrogate used for quantitation

	Lah 13	Lab 14	Lab 15	Lab 16	Lah 17	Lah 18
1-methylnaphthalene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Naphthalene-d8
2-methylnaphthalene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Naphthalene-d8
2,6-dimethylnaphthalene		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	NA
1,6,7-trimethylnaphthalene		Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Phenanthrene-d10	NA
1-methylphenanthrene	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	NA
C1-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C2-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C3-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C4-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C1-naphthalenes		Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Naphthalene-d8
C2-naphthalenes	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Naphthalene-d8
C3-naphthalenes	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Naphthalene-d8
C4-naphthalenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Naphthalene-d8
C1-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C2-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C3-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C4-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C1-fluorenes	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthene-d10	Acenaphthene-d10
C2-fluorenes	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthene-d10	Acenaphthene-d10
C3-fluorenes		Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthene-d10	Acenaphthene-d10
C1-phenanthrenes/anthracenes	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
C2-phenanthrenes/anthracenes	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
C3-phenanthrenes/anthracenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
C4-phenanthrenes/anthracenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phenanthrene-d10
C1-dihenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phanthrene-d10
C2-dihenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phanthrene-d10
C3-dibenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phanthrene-d10
C4-dibenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phanthrene-d10
C1-fluoranthenes/pyrenes	Phenanthrene-d10	Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chrysene-d12
C2-fluoranthenes/pyrenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chrysene-d12
C3-fluoranthenes/pyrenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chrysene-d12
C4-fluoranthenes/pyrenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	NA
C1-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C2-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C3-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C4-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C1-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chrysene-d12
C2-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chrysene-d12
C3-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chrysene-d12
C4-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	NA

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24
1-methylnaphthalene	Acenaphthene-d10		Naphthalene-d8			Naphthalene-d8
2-methylnaphthalene	Acenaphthene-d10	naphthalene-D8 (IS)	Naphthalene-d8			Naphthalene-d8
2,6-dimethylnaphthalene	Acenaphthene-d10		Naphthalene-d8			Naphthalene-d8
1,6,7-trimethylnaphthalene		Nitrobanzene-d5 (S)	Acenaphthene-d10			Naphthalene-d8
1-methylphenanthrene	Phenanthrene-d10		Phenanthrene-d10			Phenanthrene-d10
C1-decalins						NA
C2-decalins						NA
C3-decalins		Acenaphthene-d10 (IS)				NA
C4-decalins						NA
C1-naphthalenes	Naphthalene-d10					NA
C2-naphthalenes	Naphthalene-d10	2-Fluorobiphenyl (S)				Naphthalene-d8
C3-naphthalenes	Naphthalene-d10					Naphthalene-d8
C4-naphthalenes	Naphthalene-d10					Naphthalene-d8
C1-benzothiophenes		Phenanthrene-d10 (IS)				NA
C2-benzothiophenes						NA
C3-benzothiophenes						NA
C4-benzothiophenes		Chrysene-d12 (IS)				NA
C1-fluorenes	Acenaphthene-d10	Terphenyl-d12 (S)				Acenaphthene-d10
C2-fluorenes	Acenaphthene-d10					Acenaphthene-d10
C3-fluorenes	Acenaphthene-d10					Acenaphthene-d10
C1-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C2-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C3-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C4-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C1-dibenzothiophenes	Phenanthrene-d10					Phenanthrene-d10
C2-dibenzothiophenes	Phenanthrene-d10					Phenanthrene-d10
C3-dibenzothiophenes	Phenanthrene-d10					Phenanthrene-d10
C4-dibenzothiophenes	Phenanthrene-d10					NA
C1-fluoranthenes/pyrenes	Chrysene-d12					Phenanthrene-d10
C2-fluoranthenes/pyrenes	Chrysene-d12					NA
C3-fluoranthenes/pyrenes	Chrysene-d12					NA
C4-fluoranthenes/pyrenes	Chrysene-d12					NA
C1-naphthobenzothiophenes						NA
C2-naphthobenzothiophenes						NA
C3-naphthobenzothiophenes						NA
C4-naphthobenzothiophenes						NA
C1-chrysenes	Chrysene-d12					Chrysene-d12
C2-chrysenes	Chrysene-d12					Chrysene-d12
C3-chrysenes	Chrysene-d12					Chrysene-d12
C4-chrysenes	Chrysene-d12					Chrysene-d12

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30
1-methylnaphthalene	Fluorene-d10/Phenanthrene-d10	d10-2-methylnaphthalene	d10-fluorene			Naphthalene-d8
2-methylnaphthalene	Fluorene-d10/Phenanthrene-d10	d10-2-methylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
2,6-dimethylnaphthalene	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
1,6,7-trimethylnaphthalene	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
1-methylphenanthrene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C1-decalins	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C2-decalins	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C3-decalins	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C4-decalins	Fluorene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
C1-naphthalenes	Fluorene-d10/Phenanthrene-d10	d10-2-methylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C2-naphthalenes	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C3-naphthalenes	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C4-naphthalenes	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C1-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C2-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C3-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C4-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
C1-fluorenes	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene		Acenaphthene-d10	Acenaphthene-d10
C2-fluorenes	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene		Acenaphthene-d10	Acenaphthene-d10
C3-fluorenes	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene		Acenaphthene-d10	Acenaphthene-d10
C1-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C2-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C3-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C4-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C1-dihenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C2-dihenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C3-dihenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C4-dihenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C1-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C2-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C3-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C4-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C1-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	
C2-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	
C3-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	
C4-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
C1-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benz(a)pyrene		Chrysene-d12	Chrysene-d12
C2-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benz(a)pyrene		Chrysene-d12	Chrysene-d12
C3-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benz(a)pyrene		Chrysene-d12	Chrysene-d12
C4-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benz(a)pyrene		Chrysene-d12	Chrysene-d12

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 31	Lab 32	Lab 33
1-methylnaphthalene	Naphthalene-d8	naphthalene d ₈	d8-Naphthalene
2-methylnaphthalene	Naphthalene-d8	naphthalene d ₈	d8-Naphthalene
2,6-dimethylnaphthalene	Acenaphthalene-d10	naphthalene d ₈	d8-1-MeNaphthalene
1,6,7-trimethylnaphthalene	Acenaphthalene-d10		d8-1-MeNaphthalene
1-methylphenanthrene	Phenanthrene-d10		d10-Phenanthrene
C1-decalins	Naphthalene-d8		d8-Naphthalene
C2-decalins	Naphthalene-d8		d8-Naphthalene
C3-decalins	Naphthalene-d8		d8-Naphthalene
C4-decalins	Naphthalene-d8		d8-Naphthalene
C1-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C2-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C3-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C4-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C1-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C2-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C3-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C4-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C1-fluorenes	Acenaphthalene-d10		d10Fluorene
C2-fluorenes	Acenaphthalene-d10		d10Fluorene
C3-fluorenes	Acenaphthalene-d10		d10Fluorene
C1-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C2-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C3-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C4-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C1-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C2-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C3-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C4-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C1-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C2-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C3-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C4-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C1-naphthobenzothiophenes	Chrysene-d12		
C2-naphthobenzothiophenes	Chrysene-d12		
C3-naphthobenzothiophenes	Chrysene-d12		
C4-naphthobenzothiophenes	Chrysene-d12		
C1-chrysenes	Chrysene-d12		d12-Chrysene
C2-chrysenes	Chrysene-d12		d12-Chrysene
C3-chrysenes	Chrysene-d12		d12-Chrysene
C4-chrysenes	Chrysene-d12		d12-Chrysene

PAHs - Associated % recovery / acceptance ranges

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10
naphthalene		NA			minus 50 to plus 100		40-120	60-140	30-120	60-140
biphenyl		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
acenaphthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
acenaphthylene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
fluorene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
phenanthrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
anthracene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
fluoranthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[b]fluorene					minus 50 to plus 100		40-120	60-140		NA
benz[a]anthracene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
chrysene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
triphenylene					minus 50 to plus 100		40-120	NA		NA
benzo[b]fluoranthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[<i>j</i>]fluoranthene					minus 50 to plus 100		40-120	NA		NA
benzo[<i>k</i>]fluoranthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[a]fluoranthene					minus 50 to plus 100		40-120	NA		NA
benzo[e]pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[a]pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
perylene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
indeno[1,2,3-ed]pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[ghi]perylene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
dibenz[a,h]anthracene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
cis/trans-decalin					minus 50 to plus 100		40-120	NA		NA
dibenzofuran					minus 50 to plus 100		40-120	60-140		60-140
retene					minus 50 to plus 100		40-120	NA		NA
benzothiophene		50-120			minus 50 to plus 100		40-120	NA		NA
dibenzothiophene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
naphthobenzothiophene					minus 50 to plus 100		40-120	NA		NA

PAHs - Associated % recovery / acceptance ranges

	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21
naphthalene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
biphenyl				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
acenaphthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100	70-130		
acenaphthylene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
fluorene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
phenanthrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
anthracene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
fluoranthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
pyrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[b]fluorene				25 - 150				minus 50 to plus 100	70-130		
benz[a]anthracene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
chrysene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
triphenylene							60-140	minus 50 to plus 100			
benzo[b]fluoranthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[j]fluoranthene								minus 50 to plus 100			
benzo[k]fluoranthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[a]fluoranthene				25 - 150				minus 50 to plus 100			
benzo[e]pyrene				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[a]pyrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
perylene				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
indeno[1,2,3-cd]pyrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[ghi]perylene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100	70-130		
dibenz[a,h]anthracene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
cis/trans-decalin				25 - 150		70 - 130%		minus 50 to plus 100			
dibenzofuran				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
retene				25 - 150		70 - 130%		minus 50 to plus 100			
benzothiophene				25 - 150		70 - 130%		minus 50 to plus 100			
dibenzothiophene				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
naphthobenzothiophene				25 - 150		70 - 130%		minus 50 to plus 100			

PAHs - Associated % recovery / acceptance ranges

	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
naphthalene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
biphenyl			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
acenaphthene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
acenaphthylene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
fluorene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
phenanthrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
anthracene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
fluoranthene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[b]fluorene			NA	60-120				40-120	40-120	-50% to +100%		
benz[a]anthracene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
chrysene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
triphenylene			NA	NA				40-120	40-120	-50% to +100%		
benzo[b]fluoranthene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[j]fluoranthene			NA	NA				40-120	40-120	-50% to +100%		
benzo[k]fluoranthene			50-150	60-120				40-120	40-120	-50% to +100%		
benzo[a]fluoranthene			NA	60-120				40-120	40-120	-50% to +100%		
benzo[e]pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[a]pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
perylene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
indeno[1,2,3-cd]pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[ghi]perylene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
dibenz[a,h]anthracene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
cis/trans-decalin			NA	60-120				40-120	40-120	-50% to +100%		
dibenzofuran			NA	60-120		50-150		40-120	40-120	-50% to +100%		
retene			NA	60-120		50-150		40-120	40-120	-50% to +100%		
benzothiophene			NA	60-120		50-150		40-120	40-120	-50% to +100%		
dibenzothiophene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
naphthobenzothiophene			NA	60-120		50-150		40-120	40-120	-50% to +100%		

AlkylatedPAHs - Associated % recovery / acceptance ranges

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
1-methylnaphthalene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140				25 - 150	
2-methylnaphthalene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140		60 - 140		25 - 150	
2,6-dimethylnaphthalene					minus 50 to plus 100		40-120	60-140	30-120	60-140				25 - 150	
1,6,7-trimethylnaphthalene					minus 50 to plus 100		40-120	60-140		60-140				25 - 150	
1-methylphenanthrene					minus 50 to plus 100		40-120	60-140	30-120	60-140				25 - 150	
C1-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C2-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C3-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C4-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C1-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C4-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C2-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C3-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C4-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C1-fluorenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-fluorenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-fluorenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C4-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C4-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C4-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C2-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C3-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C4-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C1-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C4-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	

AlkylatedPAHs - Associated % recovery / acceptance ranges

	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
1-methylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
2-methylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
2,6-dimethylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
1,6,7-trimethylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
1-methylphenanthrene	70 - 130%	60-140	minus 50 to plus 100		70-130				50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-decalins			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-decalins			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-decalins			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C4-decalins			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C1-naphthalenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-naphthalenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-naphthalenes		60-140	minus 50 to plus 100		70-130				50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-naphthalenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-benzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-benzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-benzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C4-benzothiophenes			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C1-fluorenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-fluorenes		60-140	minus 50 to plus 100		70-130				50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-fluorenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-dibenzothiophenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-dibenzothiophenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-dibenzothiophenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-dibenzothiophenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C1-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C4-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C1-naphthobenzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-naphthobenzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-naphthobenzothiophenes			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C4-naphthobenzothiophenes			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C1-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		

Biomarkers - Associated % recovery / acceptance ranges

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
Carbazole					minus 50 to plus 100		40-120	NA		NA					25 - 150
17 α (H)-22,29,30-Tisnorhopane					minus 50 to plus 100			NA	80-120	NA					25 - 150
17 α (H)-2 β (H)-30-Norhopane					minus 50 to plus 100			NA	80-120	NA					
17 α (H)-2 β (H)-Hopane					minus 50 to plus 100		40-120	60-140	80-120	60-140					
$\alpha\alpha\alpha$ 20R-Cholestanate					minus 50 to plus 100			NA	80-120	NA					
$\alpha\beta\beta$ 20R-Cholestanate					minus 50 to plus 100			NA	80-120	NA					
$\alpha\beta\beta$ 20R-24S-Methylcholestanate					minus 50 to plus 100			NA	80-120	NA					
$\alpha\alpha\alpha$ 20R-24R-Ethylcholestanate					minus 50 to plus 100			NA	80-120	NA					
$\alpha\beta\beta$ 20R-24R-Ethylcholestanate					minus 50 to plus 100			NA	80-120	NA					
17 α (H)-2 β (H)-22R-Homohopane					minus 50 to plus 100			NA	80-120	NA					
17 α (H)-2 β (H)-22S-Homohopane					minus 50 to plus 100			NA	80-120	NA					

Biomarkers - Associated % recovery / acceptance ranges

	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
Carbazole			minus 50 to plus 100						NA	NA								
17 α (H)-22,29,30-Tisnorhopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17 α (H)-2 β (H)-30-Norhopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17 α (H)-2 β (H)-Hopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
$\alpha\alpha\alpha$ 20R-Cholestanate	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
$\alpha\beta\beta$ 20R-Cholestanate	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
$\alpha\beta\beta$ 20R-24S-Methylcholestanate	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
$\alpha\alpha\alpha$ 20R-24R-Ethylcholestanate	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
$\alpha\beta\beta$ 20R-24R-Ethylcholestanate	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17 α (H)-2 β (H)-22R-Homohopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17 α (H)-2 β (H)-22S-Homohopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								

PAHs -If "representative compound" used for quantitation, list the compound

	Lab 17	Lab 21	Lab 25	Lab 33
naphthalene	naphthalene		NA	
biphenyl	biphenyl		NA	
acenaphthene	acenaphthene		NA	
acenaphthylene	acenaphthylene		NA	
fluorene	fluorene		NA	
phenanthrene	phenanthrene		NA	
anthracene	anthracene		NA	
fluoranthene	fluoranthene		NA	
pyrene	pyrene		NA	
benzo[b]fluorene			NA	
benz[a]anthracene	benz[a]anthracene		NA	
chrysene	chrysene		NA	
triphenylene	triphenylene	Chrysene	chrysene	
benzo[b]fluoranthene	benzo[b]fluoranthene		NA	
benzo[j]fluoranthene			benzo[k]fluoranthene	
benzo[k]fluoranthene	benzo[k]fluoranthene		NA	
benzo[a]fluoranthene			benzo[k]fluoranthene	benzo[b]fluoranthene
benzo[e]pyrene	benzo[e]pyrene		NA	
benzo[a]pyrene	benzo[a]pyrene		NA	
perylene	perylene		NA	
indeno[1,2,3-cd]pyrene	indeno[1,2,3-cd]pyrene		NA	
benzo[ghi]perylene	benzo[ghi]perylene		NA	
dibenz[a,h]anthracene	dibenz[a,h]anthracene		NA	
cis/trans-decalin			NA	
dibenzofuran	dibenzofuran		NA	
retene			NA	
benzothiophene			NA	
dibenzothiophene	dibenzothiophene		NA	
naphthobenzothiophene			NA	

Alkylated PAHs-*if* "representative compound" used for quantitation, list the compound

	Lab 1	Lab 5	Lab 7	Lab 9	Lab 10	Lab 11	Lab 12
1-methylnaphthalene	NA	NA	NA	NA	NA	NA	
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	
2,6-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	
1-methylphenanthrene	NA	Phenanthrene	NA	NA	NA	NA	
C1-decalins	NA	Decalin	NA	NA	NA	NA	
C2-decalins	NA	Decalin	NA	NA	NA	NA	
C3-decalins	NA	Decalin	NA	NA	NA	NA	
C4-decalins	NA	Decalin	NA	NA	NA	NA	
C1-naphthalenes	1-mc and 2-methylnaphthalene	Naphthalene	Naphthalene	Naphthalene	naphthalene	naphthalene	
C2-naphthalenes	2,6-dimethylnaphthalene	Naphthalene	Naphthalene	Naphthalene	2,6-dimethylnaphthalene	naphthalene	Naphthalene
C3-naphthalenes	2,3,5-trimethylnaphthalene	Naphthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene	naphthalene	Naphthalene
C4-naphthalenes	2,3,5-trimethylnaphthalene	Naphthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene	naphthalene	Naphthalene
C1-benzothiophenes	NA	Benzo[b]thiophene	NA	NA	NA	NA	
C2-benzothiophenes	NA	Benzo[b]thiophene	NA	NA	NA	NA	
C3-benzothiophenes	NA	Benzo[b]thiophene	NA	NA	NA	NA	
C4-benzothiophenes	NA	Benzo[b]thiophene	NA	NA	NA	NA	
C1-fluorenes	Fluorene	Fluorene	Fluorene	Fluorene	Fluorene	Fluorene	
C2-fluorenes	Fluorene	Fluorene	Fluorene	Fluorene	Fluorene	Fluorene	
C3-fluorenes	Fluorene	Fluorene	Fluorene	Fluorene	Fluorene	Fluorene	
C1-phenanthrenes/anthracenes	Phenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	Phenanthrene	
C2-phenanthrenes/anthracenes	1,7-dimethylphenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	phenanthrene	Phenanthrene
C3-phenanthrenes/anthracenes	1,7-dimethylphenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	phenanthrene	Phenanthrene
C4-phenanthrenes/anthracenes	1,7-dimethylphenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	phenanthrene	Phenanthrene
C1-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene
C2-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene
C3-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene
C4-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene
C1-thiophenes/pyrenes	1-mc and 3-methylnaphthalene plus 1-mc and 4-mepycne	Pyrene	Fluoranthene	Pyrene	Pyrene	Pyrene	Pyrene
C2-thiophenes/pyrenes	1-mc and 3-methylnaphthalene plus 1-mc and 4-mepycne	Pyrene	Fluoranthene	Pyrene	Pyrene	Pyrene	Pyrene
C3-thiophenes/pyrenes	1-mc and 3-methylnaphthalene plus 1-mc and 4-mepycne	Pyrene	Fluoranthene	Pyrene	Pyrene	Pyrene	Pyrene
C4-thiophenes/pyrenes	1-mc and 3-methylnaphthalene plus 1-mc and 4-mepycne	NA	Fluoranthene	NA	Pyrene	Pyrene	Pyrene
C1-naphthalenes/pyrenes	NA	Naphthalene	Naphthalene	Naphthalene	NA	NA	
C2-naphthalenes/pyrenes	NA	Naphthalene	Naphthalene	Naphthalene	NA	NA	
C3-naphthalenes/pyrenes	NA	Naphthalene	Naphthalene	Naphthalene	NA	NA	
C4-naphthalenes/pyrenes	NA	Naphthalene	Naphthalene	Naphthalene	NA	NA	
C1-ethryenes	3-mc and 6-methryene	Chrysene	Chrysene	Chrysene	Chrysene	Chrysene	
C2-ethryenes	3-mc and 6-methryene	Chrysene	Chrysene	Chrysene	Chrysene	Chrysene	
C3-ethryenes	3-mc and 6-methryene	Chrysene	Chrysene	Chrysene	Chrysene	Chrysene	
C4-ethryenes	3-mc and 6-methryene	Chrysene	Chrysene	Chrysene	Chrysene	Chrysene	

Alkylated PAHs - If "representative compound" used for quantitation, list the compound

Alkylated PAHs - If "representative compound" used for quantitation, list the compound

	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 33
1-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
6,7-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methylphenanthrene	phenanthrene	cis-trans-decalin	cis-trans-decalin	Decalin	trans-decalin	trans-decalin	trans-decalin	trans-decalin	trans-decalin
C1-decalins				Decalin					
C2-decalins				Decalin					
C3-decalins				Decalin					
C4-decalins				trans-decalin					
C1-naphthalenes	1- & 2-methylnaphthalene	naphthalene	naphthalene	Naphthalene	Naphthalene	Naphthalene	2-Methylnaphthalene	1-2-methylnaphthalene	
C2-naphthalenes	Naphthalene	naphthalene	2,6- & 1,2-dimethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Naphthalene	2,6-dimethylnaphthalene	
C3-naphthalenes	Naphthalene	naphthalene	2,3,5- & 2,3,6-trimethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene	
C4-naphthalenes	Naphthalene	naphthalene	1,4,6,7-tetramethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Naphthalene	2,3,5,6-tetramethylnaphthalene	
C1-benzothiophenes	benzothiophene	benzothiophene	benzothiophene	Benzothiophene	benzothiophene	benzothiophene	Benzothiophene	Benzothiophene	benzothiophene
C2-benzothiophenes				Benzothiophene			Benzothiophene		Benzothiophene
C3-benzothiophenes				Benzothiophene			Benzothiophene		Benzothiophene
C4-benzothiophenes				Benzothiophene			Benzothiophene		Benzothiophene
C1-fluorenes	fluorene	fluorene	2-methylfluorene	fluorene	fluorene	fluorene	fluorene	fluorene	fluorene
C2-fluorenes	fluorene	fluorene	1,7-dimethylfluorene	fluorene	fluorene	fluorene	fluorene	fluorene	fluorene
C3-fluorenes	fluorene	fluorene	1,7-dimethylfluorene	fluorene	fluorene	fluorene	fluorene	fluorene	fluorene
C1-phenanthrenes/anthracenes	phenanthrene	phenanthrene	1- & 2-methylnaphthalene & 2-methylanthracene	Anthracene	phenanthrene	phenanthrene	phenanthrene	phenanthrene	1-methylnaphthalene
C2-phenanthrenes/anthracenes	phenanthrene	phenanthrene	3,6- & 1,7-dimethylphenanthrene	Anthracene	phenanthrene	phenanthrene	phenanthrene	phenanthrene	1-methylnaphthalene
C3-phenanthrenes/anthracenes	phenanthrene	phenanthrene	1,2,6-trimethylphenanthrene	Anthracene	phenanthrene	phenanthrene	phenanthrene	phenanthrene	1-methylnaphthalene
C4-phenanthrenes/anthracenes	phenanthrene	phenanthrene	7,7,8,8-tetra	Anthracene	phenanthrene	phenanthrene	phenanthrene	phenanthrene	1-methylnaphthalene
C1-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2,3-methyldibenzothiophenes	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C2-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2,4-dimethyldibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C3-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2,4-dimethyldibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C4-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2,4-dimethyldibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C1-fluoranthenes/pyrenes	Fluoranthene	fluoranthene	3-methylfluoranthene	Fluoranthene	pyrene	pyrene	Fluoranthene	Fluoranthene	Fluoranthene
C2-fluoranthenes/pyrenes	Fluoranthene	fluoranthene	3-methylfluoranthene	Fluoranthene	pyrene	pyrene	Fluoranthene	Fluoranthene	Fluoranthene
C3-fluoranthenes/pyrenes				Fluoranthene	pyrene	pyrene	Fluoranthene	Fluoranthene	Fluoranthene
C4-fluoranthenes/pyrenes				Fluoranthene	3-methylfluoranthene	pyrene	Fluoranthene	Fluoranthene	Fluoranthene
C1-naphthobenzothiophenes	naphthobenzothiophene	naphthobenzothiophene	naphthobenzothiophene	Naphthobenzothiophene	naphthobenzothiophene	naphthobenzothiophene	Naphthobenzothiophene	Naphthobenzothiophene	Naphthobenzothiophene
C2-naphthobenzothiophenes	naphthobenzothiophene	naphthobenzothiophene	naphthobenzothiophene	Naphthobenzothiophene	naphthobenzothiophene	naphthobenzothiophene	Naphthobenzothiophene	Naphthobenzothiophene	Naphthobenzothiophene
C3-naphthobenzothiophenes	naphthobenzothiophene	naphthobenzothiophene	naphthobenzothiophene	Naphthobenzothiophene	naphthobenzothiophene	naphthobenzothiophene	Naphthobenzothiophene	Naphthobenzothiophene	Naphthobenzothiophene
C4-naphthobenzothiophenes	Chrysene	chrysene	1- & 6-methylchrysene	Benz[a]anthracene	chrysene	chrysene	Chrysene/Triphenylene	Chrysene	Chrysene
C1-sulfonynes	Chrysene	Chrysene	5,9-dimethylchrysene	Benz[a]anthracene	chrysene	chrysene	Chrysene/Triphenylene	Chrysene	Chrysene
C2-sulfonynes	Chrysene	Chrysene	5,9-dimethylchrysene	Benz[a]anthracene	chrysene	chrysene	Chrysene/Triphenylene	Chrysene	Chrysene
C3-sulfonynes	Chrysene	Chrysene	5,9-dimethylchrysene	Benz[a]anthracene	chrysene	chrysene	Chrysene/Triphenylene	Chrysene	Chrysene
C4-sulfonynes	Chrysene	Chrysene	5,9-dimethylchrysene	Benz[a]anthracene	chrysene	chrysene	Chrysene/Triphenylene	Chrysene	Chrysene

Biomarkers -If "representative compound" used for quantitation, list the compound

	Lab 5	Lab 8	Lab 9	Lab 10	Lab 11
Carbazole	NA	NA		NA	
17 α (H)-22,29,30-Tisnorhopane	17 α (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane			
17 α (H),21 β (H)-30-Norhopane	17 α (H),21 β (H)-Hopane		H30	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane
17 α (H),21 β (H)-Hopane	NA	17 β (H),21 β (H)-Hopane		17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane
$\alpha\alpha\alpha$ 20R-Cholestane	NA	5 α - Cholestane	C27S	5 α - Cholestane	5 α -Cholestane
$\alpha\beta\beta$ 20R-Cholestane	5 α Cholestane	5 α - Cholestane	C27S	5 α - Cholestane	5 α -Cholestane
$\alpha\beta\beta$ 20R-24S-Methylcholestane	5 α Cholestane	5 α - Cholestane	C27S	5 α - Cholestane	5 α -Cholestane
$\alpha\alpha\alpha$ 20R-24R-Ethylcholestane	5 α Cholestane	5 α - Cholestane	C27S	5 α - Cholestane	5 α -Cholestane
$\alpha\beta\beta$ 20R-24R-Ethylcholestane	5 α Cholestane	5 α - Cholestane	C27S	5 α - Cholestane	5 α -Cholestane
17 α (H),21 β (H)-22R-Homohopane	17 α (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	H30	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane
17 α (H),21 β (H)-22S-Homohopane	17 α (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	H30	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane

Biomarkers -If "representative compound" used for quantitation, list the compound

	Lab 12	Lab 16	Lab 17	Lab 18	Lab 29
Carbazole				NA	
17 α (H)-22,29,30-Tisnorhopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 α (H),21 β (H)-Hopane	17 α (H),21 β (H)-Hopane	17 α (H),21 β (H)-hopane
17 α (H),21 β (H)-30-Norhopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 α (H),21 β (H)-Hopane	17 α (H),21 β (H)-hopane
17 α (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	NA	
$\alpha\alpha\alpha$ 20R-Cholestane	5 α -Cholestane		5 α -Cholestane	NA	5b(H)Cholane
$\alpha\beta\beta$ 20R-Cholestane	5 α -Cholestane	$\alpha\alpha\alpha$ 20R-Cholestane	5 α -Cholestane	5 α Cholestane	5b(H)Cholane
$\alpha\beta\beta$ 20R-24S-Methylcholestane	5 α -Cholestane	$\alpha\alpha\alpha$ 20R-Cholestane	5 α -Cholestane	5 α Cholestane	5 α -Cholestane
$\alpha\alpha\alpha$ 20R-24R-Ethylcholestane	5 α -Cholestane	$\alpha\alpha\alpha$ 20R-Cholestane	5 α -Cholestane	5 α Cholestane	5 α -Cholestane
$\alpha\beta\beta$ 20R-24R-Ethylcholestane	5 α -Cholestane	$\alpha\alpha\alpha$ 20R-Cholestane	5 α -Cholestane	5 α Cholestane	5 α -Cholestane
17 α (H),21 β (H)-22R-Homohopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 α (H),21 β (H)-Hopane	17 α (H),21 β (H)-Hopane	17 α (H),21 β (H)-hopane
17 α (H),21 β (H)-22S-Homohopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 β (H),21 β (H)-Hopane	17 α (H),21 β (H)-Hopane	17 α (H),21 β (H)-hopane

APPENDIX C

Laboratory Notes Submitted with the Data

Lab	Notes				
1	Due to higher conc in the QASED sample, chrysene and triphenylene did not separate enough to quantify individually.				
	QA10SED01	mean	stdcv	rsd	
	chrysene/triphenylene	2513	37	1.48%	
2	QA10SED01	QA10SED01	QA10SED01	IS/surrogate	Associated % recovery
	Sample 1	Sample 2	Sample 3		
	(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	used for quantitation	acceptance ranges
	benzo(b)naphtho(2,1-d)thiophene	360	356	d10-fluoranthene	50-120
	4-methylbiphenyl	67.3	62.9	d10-acenaphthene	50-120
	1-ethyl naphthalene	<17	<17	d8-naphthalene	50-120
	1,2-dimethyl naphthalene	26.4	24.5	d10-acenaphthylene	50-120
	2,3,5-trimethyl naphthalene	146	141	d10-acenaphthene	50-120
	1-methylfluorene	108	110	d10-fluorene	50-120
	2-methylphenanthrene	572	531	d10-phenanthrene	50-120
	3,6-dimethylphenanthrene	398	387	d10-phenanthrene	50-120
	2-methylfluoranthene	435	456	d10-fluoranthene	50-120

1 SRM-1941b was not available at our laboratory for these analyses. Therefore, we substituted NRC CNRS HS-6 Marine Sediment as the SRM material. Data for this SRM, and associated certified concentrations, are included below along with laboratory fortified matrix spike recoveries.

Analysis Date: 9/3/10

	HS-6	HS-6	HS-6	Laboratory-Fortified	
	Sample 1 (ng/g dry mass)	Sample 2 (ng/g dry mass)	Sample 3 (ng/g dry mass)	Certified (ng/g)	Matrix Spiked Recoveries
naphthalene	4508	3457	3165	4100±1100	82
biphenyl	411	379	353	NA	112
acenaphthene	131	122	122	230±70	97
acenaphthylene	77.1	74.8	75.2	190±50	104
fluorene	160	155	152	470±120	105
phenanthrene	2990	2846	2827	3000±600	104
anthracene	850	778	799	1100±400	104
fluoranthene	2984	2908	2915	3540±650	105
pyrene	2100	2020	1978	3000±600	103
benz[a]anthracene	1100	1035	1168	1800±300	110
chrysene	2149	2112	2108	2000±300	103
benzo[b]fluoranthene	1793	1648	1865	2800±600	116
benzo[k]fluoranthene	2074	2186	2085	1430±150	100
benzo[e]pyrene	1776	2085	2000	NA	111
benzo[a]pyrene	1295	1351	1456	2200±400	101
perylene	307	343	354	NA	110
indeno[1,2,3-cd]pyrene	1479	1448	1514	1950±580	86
benzo[ghi]perylene	1561	1478	1602	1780±720	103
dibenzo[a,h]anthracene	362	388	359	490±160	106
benzothiophene	142	130	118	NA	93
dibenzothiophene	213	207	197	NA	95
1-methylnaphthalene	1701	1421	1261	NA	105
2-methylnaphthalene	2696	2155	1906	NA	101
benzo(b)naptho(2,1-d)thiophene	173	189	177	NA	97
4-methylbiphenyl	119	138	130	NA	111
1-ethyl naphthalene	176	127	120	NA	90
1,2-dimethyl naphthalene	307	183	161	NA	84
2,3,5-trimethyl naphthalene	363	456	427	NA	104
1-methylfluorene	106	128	134	NA	113
2-methylphenanthrene	681	636	589	NA	112
3,6-dimethylphenanthrene	135	118	102	NA	115
2-methylfluoranthene	302	285	270	NA	109

3	Analysis of SRM 1941b was not performed. Samples 158 and 167 were extracted in one batch on 9/07/2010. Sample 183 was extracted 9/08/2010. The concentration range of 5-80 ng/uL for the calibration curve represent on column concentrations. The range in final reporting concentration is 4000 ng/g dry mass to 320000 ng/g dry mass. Concentrations reported as <4000 ng/g dry mass represent < quantitation limit. Values reported below 4000 ng/g dry mass are below the quantitation limit and are considered estimated.																																																																																																																																																																																								
4	T=Reported value is less than the reporting limit (RL). Result is estimated. We normally extract 25 grams of sample, since less was provided the RLs were raised. Not enough sample was submitted for TOC analysis.																																																																																																																																																																																								
5	J values will be reported as <100																																																																																																																																																																																								
6	1-methylphenanthrene has an intertent peak. Benzol(k)fluoranthene co-elutes with benzo(b)fluoranthene. Dibenzofuran has an intertent peak.																																																																																																																																																																																								
7	* - Analytes coelute and cannot be resolved under the chromatographic conditions used ** - The analytes could not be resolved from the Sulfur interference *** - Analyte coelutes with one of the other isomers of Benzofluoranthene. Efforts are being made to confirm which isomer it X - Results may have a high bias due to interference from Sulfur																																																																																																																																																																																								
8	QA10SED01 Sample quantification limits = 100ng/g SRM 1941b Sample quantification limits = 20ng/g																																																																																																																																																																																								
13	<table border="1"> <thead> <tr> <th></th> <th>QA10SED01</th> <th>QA10SED01</th> <th>QA10SED01</th> <th>SRM 1941b</th> <th>SRM 1941b</th> <th>SRM 1941b</th> <th>IS/surrogate used for quantitation</th> </tr> <tr> <th></th> <th>Sample 1 (ng/g dry mass)</th> <th>Sample 2 (ng/g dry mass)</th> <th>Sample 3 (ng/g dry mass)</th> <th>Sample 1 (ng/g dry mass)</th> <th>Sample 2 (ng/g dry mass)</th> <th>Sample 3 (ng/g dry mass)</th> <th>g/g dry mass</th> </tr> </thead> <tbody> <tr> <td>1,3-dimethylaphthalene</td> <td>103</td> <td>87</td> <td>63</td> <td>59</td> <td>30.0</td> <td>54</td> <td>Naphthalene-d8</td> </tr> <tr> <td>1,5-dimethylaphthalene</td> <td>16</td> <td>14</td> <td>10</td> <td>9</td> <td>5.01</td> <td>6.92</td> <td>Naphthalene-d8</td> </tr> <tr> <td>1,6-dimethylaphthalene</td> <td>57</td> <td>51</td> <td>40</td> <td>33</td> <td>20</td> <td>28</td> <td>Naphthalene-d8</td> </tr> <tr> <td>2,6,2,7-dimethylaphthalene</td> <td>96</td> <td>83</td> <td>62</td> <td>38</td> <td>21</td> <td>33</td> <td>Naphthalene-d8</td> </tr> <tr> <td>1,4,2,3-dimethylaphthalene</td> <td>55</td> <td>47</td> <td>35</td> <td>28</td> <td>15</td> <td>23</td> <td>Naphthalene-d8</td> </tr> <tr> <td>2,3,5-trimethylaphthalene</td> <td>100</td> <td>76</td> <td>59</td> <td>23</td> <td>16</td> <td>19</td> <td>Acenaphthene-d10</td> </tr> <tr> <td>1-methylfluorene</td> <td>86</td> <td>37</td> <td>50</td> <td>32</td> <td>22</td> <td>26</td> <td>Acenaphthene-d10</td> </tr> <tr> <td>1,8-dimethylfluorene</td> <td>63</td> <td>46</td> <td>48</td> <td>25</td> <td>31</td> <td>21</td> <td>Phenanthrene-d10</td> </tr> <tr> <td>4-methylbenzothiophene</td> <td>239</td> <td>179</td> <td>142</td> <td>42</td> <td>32</td> <td>34</td> <td>Phenanthrene-d10</td> </tr> <tr> <td>4,6-dimethylbenzothiophene</td> <td>277</td> <td>199</td> <td>159</td> <td>31</td> <td>26</td> <td>24</td> <td>Phenanthrene-d10</td> </tr> <tr> <td>2-methylphenanthrene</td> <td>543</td> <td>454</td> <td>353</td> <td>169</td> <td>142</td> 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mass	1,3-dimethylaphthalene	103	87	63	59	30.0	54	Naphthalene-d8	1,5-dimethylaphthalene	16	14	10	9	5.01	6.92	Naphthalene-d8	1,6-dimethylaphthalene	57	51	40	33	20	28	Naphthalene-d8	2,6,2,7-dimethylaphthalene	96	83	62	38	21	33	Naphthalene-d8	1,4,2,3-dimethylaphthalene	55	47	35	28	15	23	Naphthalene-d8	2,3,5-trimethylaphthalene	100	76	59	23	16	19	Acenaphthene-d10	1-methylfluorene	86	37	50	32	22	26	Acenaphthene-d10	1,8-dimethylfluorene	63	46	48	25	31	21	Phenanthrene-d10	4-methylbenzothiophene	239	179	142	42	32	34	Phenanthrene-d10	4,6-dimethylbenzothiophene	277	199	159	31	26	24	Phenanthrene-d10	2-methylphenanthrene	543	454	353	169	142	120	Phenanthrene-d10	2-methylanthracene	123	112	93	104	51	68	Phenanthrene-d10	3,6-dimethylphenanthrene	368	261	198	46	35	32	Phenanthrene-d10	2,3-dimethylanthracene	106	80	72	47	45	25	Phenanthrene-d10	1-methylfluoranthene	393	248	239	63	60	61	Phenanthrene-d10	2-methylfluoranthene	587	421	350	112	109	95	Phenanthrene-d10	1-methylpyrene	223	172	157	137	134	66	Phenanthrene-d10	1/2-dimethylbenzo(a)anthracene	114	89	79	27	25	22	Chrysene-d12	7/9-dimethylbenzo(a)anthracene	436	326	296	158	148	49	Chrysene-d12	6,8-dimethylbenzo(a)anthracene	384	273	253	61	57	49	Chrysene-d12	3,9-dimethylbenzo(a)anthracene	101	74	62	11	19	8.91	Chrysene-d12
	QA10SED01	QA10SED01	QA10SED01	SRM 1941b	SRM 1941b	SRM 1941b	IS/surrogate used for quantitation																																																																																																																																																																																		
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3,6-dimethylphenanthrene	368	261	198	46	35	32	Phenanthrene-d10																																																																																																																																																																																		
2,3-dimethylanthracene	106	80	72	47	45	25	Phenanthrene-d10																																																																																																																																																																																		
1-methylfluoranthene	393	248	239	63	60	61	Phenanthrene-d10																																																																																																																																																																																		
2-methylfluoranthene	587	421	350	112	109	95	Phenanthrene-d10																																																																																																																																																																																		
1-methylpyrene	223	172	157	137	134	66	Phenanthrene-d10																																																																																																																																																																																		
1/2-dimethylbenzo(a)anthracene	114	89	79	27	25	22	Chrysene-d12																																																																																																																																																																																		
7/9-dimethylbenzo(a)anthracene	436	326	296	158	148	49	Chrysene-d12																																																																																																																																																																																		
6,8-dimethylbenzo(a)anthracene	384	273	253	61	57	49	Chrysene-d12																																																																																																																																																																																		
3,9-dimethylbenzo(a)anthracene	101	74	62	11	19	8.91	Chrysene-d12																																																																																																																																																																																		
14	QA10SED01 Jar 108: a 2,6-Dimethylaphthalene may be high biased due to coelution with an unknown dimethylaphthalene isomer. b 1,6,7-Trimethylaphthalene may be high biased due to coelution with an unknown trimethylaphthalene isomer. c Triphenylene coelutes with Chrysene in our method. d Benzo(j)fluoranthene coelutes with Benzo(k)fluoranthene in our method																																																																																																																																																																																								
16	Other: Reported Chrysene concentration equals combined detected Chrysene and Triphenylene concentration (we do not report them separately). Reported Benzo[k]fluoranthene concentration equals combined detected Benzo[j]fluoranthene and Benzo[k]fluoranthene concentration (we do not report them separately)																																																																																																																																																																																								
17	NA = Not analyzed for Other = Matrix interferences precluded identification/quantitation of target analyte																																																																																																																																																																																								
18	Any values under 100 ug/Kg weight weight are below the reporting limit and should either not be reported or reported with qualifiers.																																																																																																																																																																																								
19	Quantitations for 1-Methylphenanthrene, C2-Fluorenes and C1-Phenanthrenes are not certain due to interference with sulfur peak. Due to sulfur interference, result for 1-Methylphenanthrene in QA10SED01/Sample 2 is uncertain. No peak found for 1-Methylphenanthrene in SRM1941b/Sample 2 due to large sulfur peak. No C2-Fluorenes peaks detected in QA10SED01/Sample 2 due to sulfur interference. No C2-Fluorenes peaks found in SRM1941b/Sample 2 due to large sulfur peak. No C1-phenanthrenes/anthracenes peaks found in SRM1941b/Sample 2 due to large sulfur peak. QA10SED01: Method Detection Limit - 75 ng/g; Practical Quantitation Limit - 300 ng/g SRM 1941b: Method Detection Limit - 21 ng/g; Practical Quantitation Limit - 82 ng/g The Method Detection Limit for each alkyl homologue series is assigned twice the method detection limit of its representative compound used for quantitation. Benzo[b]fluoranthene and Benzo[k]fluoranthene results reported from Agilent 5973 MSD/6890CC, Phenomenex ZB-5MS column, 30m length, 0.25mm id, 0.50um film thickness. Our current procedure uses 30 grams of sediment sample to 1 mL final volume. For the first sample of QA10SED01, we tried to use 12 grams, but determined the 5 x dilution was required due to heavy matrix effects. As a result, 5 grams to 1 mL was used for the remaining two samples.																																																																																																																																																																																								

23	QA10SED01	QA10SED01	QA10SED01	SRM 1941b	
	Batch A	Batch B	Batch C	Batch A	
	Sample 1	Sample 2	Sample 3	Sample 1	
	BP/WLJ	BP/WLJ	BP/WLJ	BP/WLJ	
	9/23/2010 - 9/24/23/2010	9/24/23/2010	9/24/23/2010	9/24/23/2010	9/24/2010
	194	173	189		
1,4,6,7-TETRAMETHYLNAPHTHALI	<125	<125	<125	<8.0	
2,7-DI-TERT-BUTYLNAPHTHALENE	<125	<125	<125	<8.0	
4-METHYLBENZOTHIOPHENE	<125	147	127	14.3	
2,3-DIMETHYLBENZOTHIOPHENE	<125	1920	1680	<8.0	
2,3,4-/2,3,6-TRIMETHYLBENZOTHO	<125	<125	<125	8.97	
1,3-DIPHENYLBENZO[C]THIOPHENI	<125	<125	<125	<8.0	
9-N-PROPYLFLUORENE	<125	<125	<125	9.72	
3-ETHYLPHENANTHRENE	151	210	197	<8.0	
1,2,5-/1,2,7-TRIMETHYLPHENANTH	<125	<125	<125	8.91	
9-N-PROPYLPHENANTHRENE	<125	<125	<125	<8.0	
2-METHYLFLUORANTHENE	138	<125	165	17.8	
3-METHYLDIBENZOTHIOPHENE	<125	<125	<125	<8.0	
7,8,9,10-TETRAHYDROBENZO[BJNA	<125	<125	<125	<8.0	
6-ETHYLCHRYSENE	<125	<125	<125	<8.0	
6-N-BUTYLCHRYSENE	<125	<125	<125	<8.0	
1-N-BUTYL PYRENE	<125	<125	<125	<8.0	
1-N-PROPYL PYRENE	147	177	172	12.6	
1,5-/1,7-DIMETHYLPHENANTHRENI	722	950	959	41.1	
1,2-DIHYDRO-3,5,8-TRIMETHYLNAT	415	475	403	21.9	
2-ETHYL-6-MEHTYLNAPHTHALENI	<125	<125	<125	<8.0	
2 ETHYLNAPHTHALENE	<125	<125	<125	<8.0	
1,8 DIMETHYLNAPHTHALENE	<125	<125	<125	<8.0	
6 METHYLCHRYSENE	<125	<125	<125	35.3	
7,12DIMETHYLBENZ A ANTHRA	<125	<125	<125	<8.0	
1 ETHYLNAPHTHALENE	<125	<125	<125	<8.0	
1,3 DIMETHYLNAPHTHALENE	<125	<125	<125	<8.0	
2 ISOPROPYLNAPHTHALENE	<125	<125	<125	<8.0	
1,2 DIMETHYLNAPHTHALENE	<125	<125	<125	<8.0	
2,3,5 TRIMETHYLNAPHTHALEN	<125	<125	<125	10.2	
1 M ETHYLFLUORENE	<125	<125	<125	<8.0	
2 MEHTYLPHENANTHRENE	188	288	277	41.3	
1 METHYL PYRENE	290	329	337	22.4	
5 M ETHYLCHRYSENE	1130	1120	1130	73.7	

25	<symbol refers to values less than our MDL
The reported value of chrysene is the sum of chrysene and triphenylene	
The reported value of benzo(j)fluoranthene is the sum of benzo(k)fluoranthene and benzo(j)fluoranthene	
"other" = analyte co-elutes with another reported analyte. Triphenylene co-elutes with chrysene. Benzo[j]fluoranthene co-elutes with benzo[k]fluoranthene	
Diben[a,h]anthracene co-elutes with diben[a,c]anthracene	
27	Recovery Surrogates (added before extraction) % recovery % recovery % recovery % recovery % recovery Default limits
	d8-naphthalene 54 48 50 41.6 44.4 30-160
	d10-acenaphthene 68 64 62 52.8 56.8 30-160
	d10-phenanthrene 88 80 64 63.6 66.4 30-160
	d12-chrysene 76 72 62 36.4 51.6 30-160
	d12-perylene 70 68 70 26 40.8 30-160
29	1) Surrogates added prior to extraction were used for recovery correction of PAH and Alkylated PAH concentrations only. 2) chrysene is reported as a coelution of both chrysene and triphenylene. 3) benzo[k]fluoranthene is reported as a coelution of both benzo[j]fluoranthene and benzo[k]fluoranthene. 4) for biomarkers: ααα 20R-Cholestane αββ 20R-Cholestane αββ 20R 24S-Methylcholestane ααα 20R 24R-Ethylcholestane αββ 20R 24R-Ethylcholestane
	the laboratory quantifies these as: 5α,14a(H),17a(H)-20R-Cholestane 5α,14b(H),17b(H)-20R-Cholestane 5α,14b,17b-20R-Methylcholestane 5α,14a(H),17a(H)-20R-Ethylcholestane 5α,14b(H),17b(H)-20R-Ethylcholestane

32	QA 10SED01	QA 10SED01	QA 10SED01	SRM 1941b	SRM 1941b	SRM 1941b	IS/surrogate
	Sample 1 (ng/g dry mass)	Sample 2 (ng/g dry mass)	Sample 3 (ng/g dry mass)	Sample 1 (ng/g dry mass)	Sample 2 (ng/g dry mass)	Sample 3 (ng/g dry mass)	
1,6-dimethylnaphthalene	209.78	207.92	215.00	9.06	8.91	9.49	naphthalene d8
1,2-dimethylnaphthalene	84.71	82.21	92.06	56.46	55.96	57.87	naphthalene d8
1_methylphenanthrene	381.86	364.26	401.45	102.78	98.04	108.05	phenanthrene d10
3_methylphenanthrene	763.57	732.14	810.65	205.51	197.06	218.19	phenanthrene d10
2_methylphenanthrene	611.48	586.76	646.24	164.58	157.93	173.94	phenanthrene d10
2-methylanthracene	131.77	142.61	151.29	35.46	38.38	40.72	phenanthrene d10
9_methylphenanthrene	447.37	427.10	470.86	120.41	114.95	126.73	phenanthrene d10
4_H_cyclopenta[def]phenanthrene	195.02	191.05	207.03	52.49	51.42	55.72	phenanthrene d10
1,7_dimethylphenanthrene	568.35	565.58	633.03	152.97	152.23	170.38	phenanthrene d10
3_methylfluoranthrene	389.87	388.64	421.40	104.93	104.60	113.42	fluoranthene d10
1_methylfluoranthene	209.94	199.56	214.05	56.51	53.71	57.61	fluoranthene d10
4_methylpyrene	633.06	618.75	667.23	170.39	166.54	179.58	pyrene d12
1_methylpyrene	431.88	419.97	456.35	116.24	113.04	122.83	pyrene d12
benzo[ghi]fluoranthene	380.08	367.35	391.99	102.30	98.87	105.50	benzo[a]anthracene d12
benzo[c]phenanthrene	333.05	321.32	346.48	89.64	86.48	93.26	benzo[a]anthracene d12
cyclopentafusedpyrene	39.70	38.41	38.52	10.69	10.34	10.37	benzo[a]anthracene d12
3_methylchrysene	286.50	278.94	301.20	77.11	75.08	81.07	benzo[a]anthracene d12
6_methylchrysene	166.01	179.95	175.46	44.68	48.43	47.23	benzo[a]anthracene d12
dibenz[a,j]anthracene	180.98	174.02	192.34	48.71	46.84	51.77	dibenzo[a,h]anthracene
dibenz[a,c]anthracene	159.15	152.88	168.60	42.84	41.15	45.38	dibenzo[a,h]anthracene
dibenz[a,h]anthracene	166.10	159.83	175.72	44.71	43.02	47.30	dibenzo[a,h]anthracene
benzo[b]chrysene	237.59	226.71	254.21	63.95	61.02	68.42	dibenzo[a,h]anthracene
picene	268.28	257.41	280.38	72.21	69.28	75.46	dibenzo[a,h]anthracene
anthanthrene	239.69	238.50	263.02	76.52	64.19	70.79	benzo[ghi]perylene d12
dibenz[b,k]fluoranthene	294.64	278.97	280.28	102.40	94.63	91.47	benzo[ghi]perylene d12
dibenzo[a,e]pyrene	207.37	226.12	227.17	97.49	84.48	90.76	benzo[ghi]perylene d12
coronene	265.57	274.62	252.70	99.15	94.62	89.11	benzo[ghi]perylene d12
dibenzo[a,h]pyrene	45.79	42.60	43.75	24.41	24.92	22.81	benzo[ghi]perylene d12
chrysene/triphenylene	2334.52	2255.26	2437.49	464.55	484.98	463.25	benzo[a]anthracene d12

33 Reported data from GC/MS and GC/MS/MS - The GC/MS data used in the interlaboratory comparison.

	GC/MS		GC/MS		GC/MS/MS		GC/MS/MS	
	QA 10SED01	SRM 1941b	QA 10SED01	SRM 1941b	QA 10SED01	stdev	mean	stdev
PAH ANALYSES								
naphthalene	653	18	906	25	643	18	857	69
biphenyl	127	8	78.2	7.7	151	18	59.3	15.9
acenaphthene	76.6	1.7	31.2	0.3	110	22	36.2	4.8
acenaphthylene	199	16	68.6	9.6	442	55	85.8	17.4
fluorene	110	3	51.6	0.7	138	7	60.2	6.5
phenanthrene	1587	6	388	2	2209	244	439	59
anthracene	546	20	168	14	856	88	166	26
fluoranthene	4660	79	572	32	4594	251	656	77
pyrene	3837	84	476	9	4500	218	601	59
benzo[b]fluorene	132	22	57.0	7.4	NA	NA	NA	NA
benzo[a]anthracene	1500	10	255	12	1476	126	222	29
chrysene	2873	25	392	7	Other	Other	Other	Other
triphenylene	w/ chrysene	w/ chrysene	w/ chrysene	w/ chrysene	Other	Other	Other	Other
benzo[b]fluoranthene	2010	78	363	38	1609	326	373	20
benzo[j]fluoranthene	2419	68	436	37	Other	Other	Other	Other
benzo[k]fluoranthene	w/ B(j)F	w/ B(j)F	w/ B(j)F	w/ B(j)F	Other	Other	Other	Other
benzo[a]fluoranthene	235	6	75.6	3.6	NA	NA	NA	NA
benzo[e]pyrene	1940	10	308	14	1900	148	293	31
benzo[a]pyrene	1133	25	260	12	825	61	328	21
perylene	473	6	371	46	508	25	412	55
indeno[1,2,3-cd]pyrene	1443	167	280	52	1513	57	326	24
benzo[ghi]perylene	1520	20	246	15	1672	102	235	28
dibenz[a,h]anthracene	356	23	73.0	18.6	NA	NA	NA	NA
cis/trans-decalin	DL	DL	DL	DL	NA	NA	NA	NA
dibenzofuran	261	43	97.3	11.0	NA	NA	NA	NA
retene	853	20	52.1	7.9	NA	NA	NA	NA
benzothiophene	38.8	6.0	49.3	0.6	NA	NA	NA	NA
dibenzothiophene	172	3	51.2	3.2	241	15	59.6	5.1

33 cont.	ALKYLATED PAH ANALYSES	GC/MS		GC/MS		GC/MS/MS		GC/MS/MS	
		QA10SED01		SRM 1941b		QA10SED01		SRM 1941b	
		mean	stdev	mean	stdev	mean	stdev	mean	stdev
	1-methylnaphthalene	192	16	127	1	218	12	130	9
	2-methylnaphthalene	446	48	260	21	491	15	245	52
	2,6-dimethylnaphthalene	269	4	97.1	14.7	404	15	89.8	13.4
	1,6,7-trimethylnaphthalene	210	31	36.3	6.7	119	14	22.4	2.4
	1-methylphenanthrrene	381	6	64.0	1.4	847	96	92.6	2.2
	C1-naphthalenes	495	113	343	33	NA		NA	
	C2-naphthalenes	805	110	374	63	NA		NA	
	C3-naphthalenes	1453	129	323	77	NA		NA	
	C4-naphthalenes	2500	101	301	35	NA		NA	
	C1-benzothiophenes	130	4	48.4	2.1	NA		NA	
	C2-benzothiophenes	96.2	4.2	42.5	4.6	NA		NA	
	C3-benzothiophenes	207	11	55.3	22.9	NA		NA	
	C4-benzothiophenes	191	75	27.3	0.4	NA		NA	
	C1-fluorenes	435	68	111	14	NA		NA	
	C2-fluorenes	397	40	113	61	NA		NA	
	C3-fluorenes	1640	182	171	50	NA		NA	
	C1-phenanthrenes/anthracenes	2707	462	377	18	NA		NA	
	C2-phenanthrenes/anthracenes	4373	970	400	73	NA		NA	
	C3-phenanthrenes/anthracenes	3927	428	267	87	NA		NA	
	C4-phenanthrenes/anthracenes	3200	1242	233	85	NA		NA	
	C1-dibenzothiophenes	531	78	59.4	12.4	NA		NA	
	C2-dibenzothiophenes	1176	228	95.0	21.4	NA		NA	
	C3-dibenzothiophenes	1450	260	97.1	22.2	NA		NA	
	C4-dibenzothiophenes	895	154	56.6	24.6	NA		NA	
	C1-fluoranthenes/pyrenes	2113	378	272	8	NA		NA	
	C2-fluoranthenes/pyrenes	2233	430	228	29	NA		NA	
	C3-fluoranthenes/pyrenes	1457	337	129	13	NA		NA	
	C4-fluoranthenes/pyrenes	1823	427	206	30	NA		NA	
	C1-chrysenes	2003	387	234	15	NA		NA	
	C2-chrysenes	1517	142	217	16	NA		NA	
	C3-chrysenes	1111	208	114	8	NA		NA	
	C4-chrysenes	715	371	50.4	14.5	NA		NA	
	For GC/MS method	Chrysene and triphenylene measured together as one coeluting peak.							
		Benzo[j]fluoranthene and benzo[k]fluoranthene measured together as one coeluting peak.							
		dibenz[a,h]anthracene and dibenz[a,c]anthracene measured together as one coeluting peak.							
		2,6- and 2,7-Dimethylnaphthalene measured as one coeluting peak.							
	For GC/MS/MS method								
	chrysene+triphenylene					6262	780	465	6
	benzo[j+k]fluoranthene					1535	50	389	96

APPENDIX D

Charts of QA10SED01 and SRM 1941b Results by Analyte

See Tables 1 through 3 for results reported as $<number$, detection limit, etc.

For QA10SED01 plots:

Solid line: exercise assigned value

Dotted line: $z = \pm 1$, i. e., 25 % from assigned value

Dotted/dashed line: $z = \pm 2$, i. e., 50 % from assigned value

Dashed line: $z = \pm 3$, i. e., 75 % from assigned value

For SRM 1941b plots:

Solid line: material certified concentration or target value (see caption of each plot)

Dotted line: 95 % confidence interval (CI)

Dashed line: 30 % from 95 % confidence interval (CI)

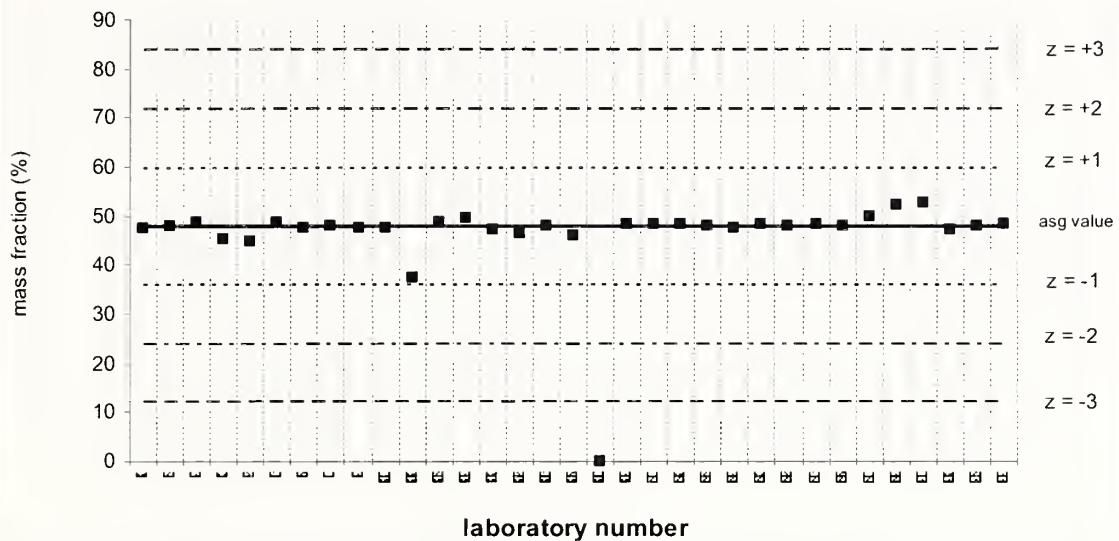
Note: The numbers added to the charts are the values reported that are off the scale of the chart.

Percent Water

QA10SED01

Assigned value = 47.8 % $s = 2.4 \%$ 95% CI = 0.8 %

Reported Results: 32 Quantitative Results: 32



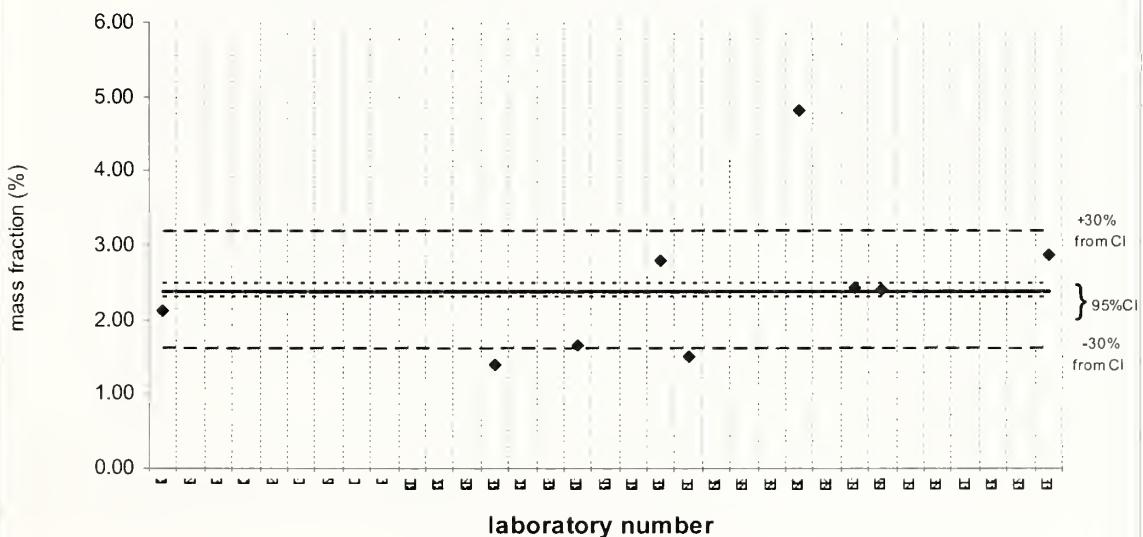
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

Percent Water

SRM 1941b

Target Value = 2.39 % ; 95% CI 0.08 %

Reported Results: 9 Quantitative Results: 9

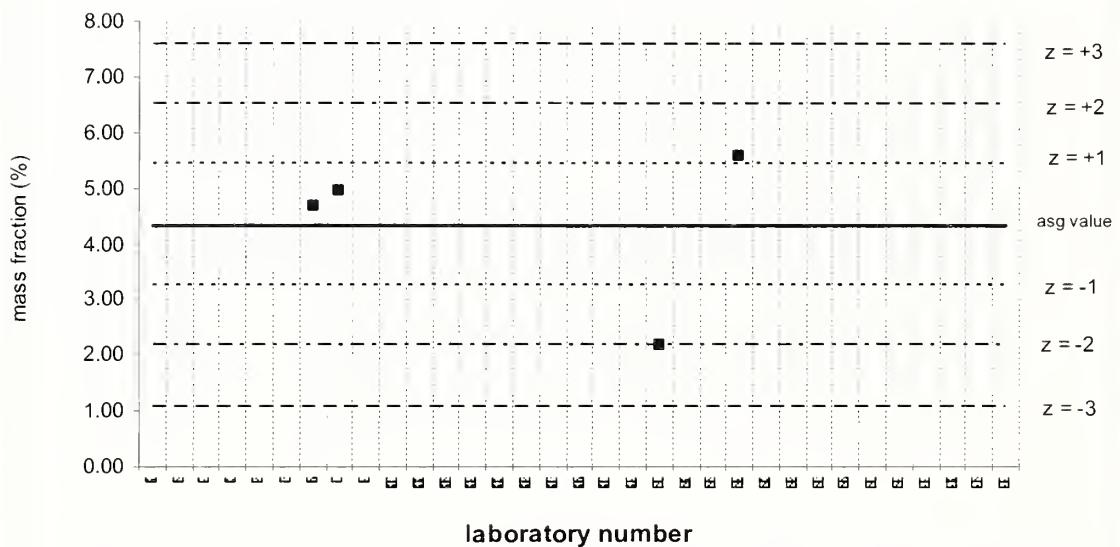


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Note – Lab 29 reported % solids (shown above). Their % water for QA10SED01 was 47.8% with a std dev 0.5% (n=3).

TOC**QA10SED01**Assigned value = 4.34 % $s = 1.49 \%$ 95% CI = 1.46 %

Reported Results: 4 Quantitative Results: 4

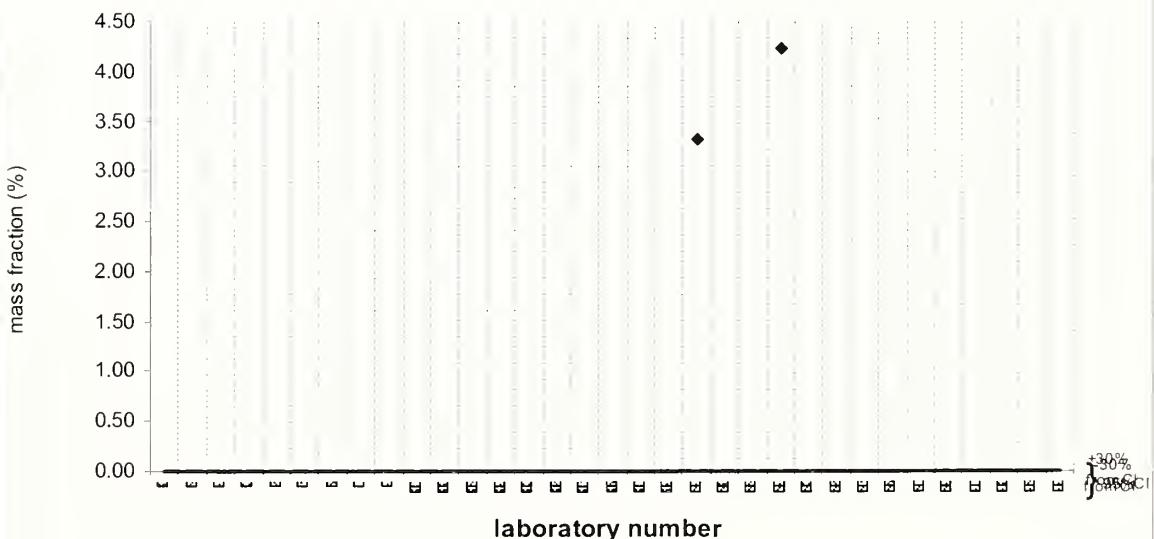


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

TOC**SRM 1941b**

Target Value = no target %

Reported Results: 2 Quantitative Results: 2

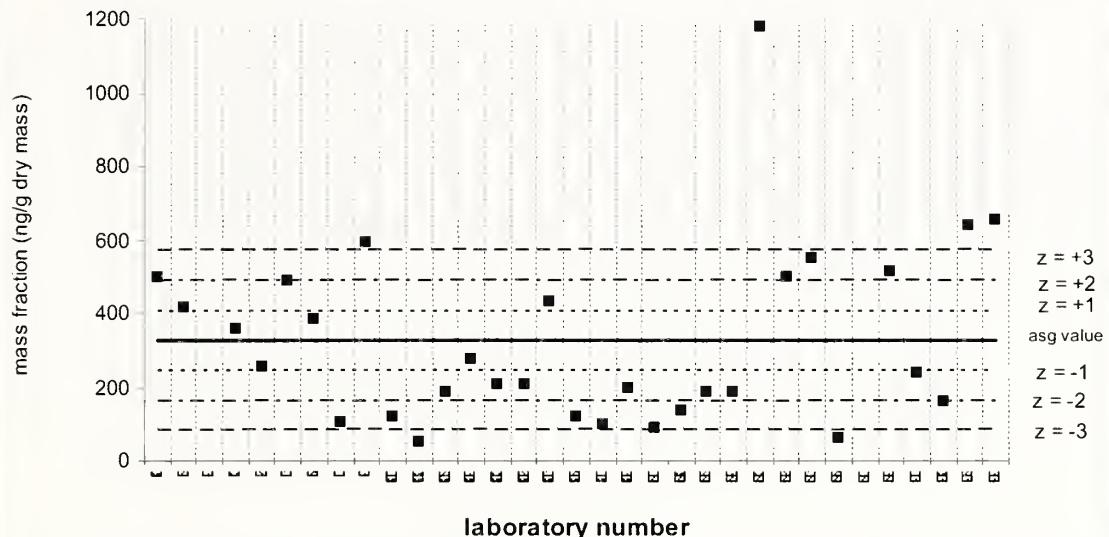


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Note -Lab 29: % TOC for QA10SED01 - 5.17 % with a std dev 0.14% (n=3) and for SRM 1941b – 3.18 with a std dev 0.02% (n=3).

naphthalene**QA10SED01**Assigned value = 325 ng/g (dry mass) $s = 243$ ng/g (dry mass) 95% CI = 85 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 31

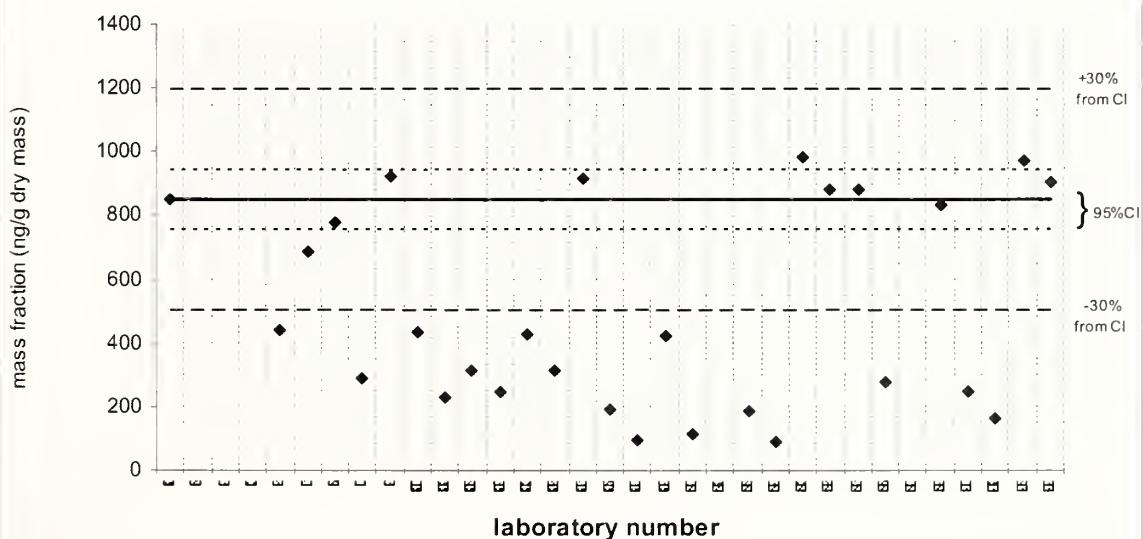


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

naphthalene**SRM 1941b**

Certified Value = 848 ng/g (dry mass) ; 95% CI 95 ng/g (dry mass)

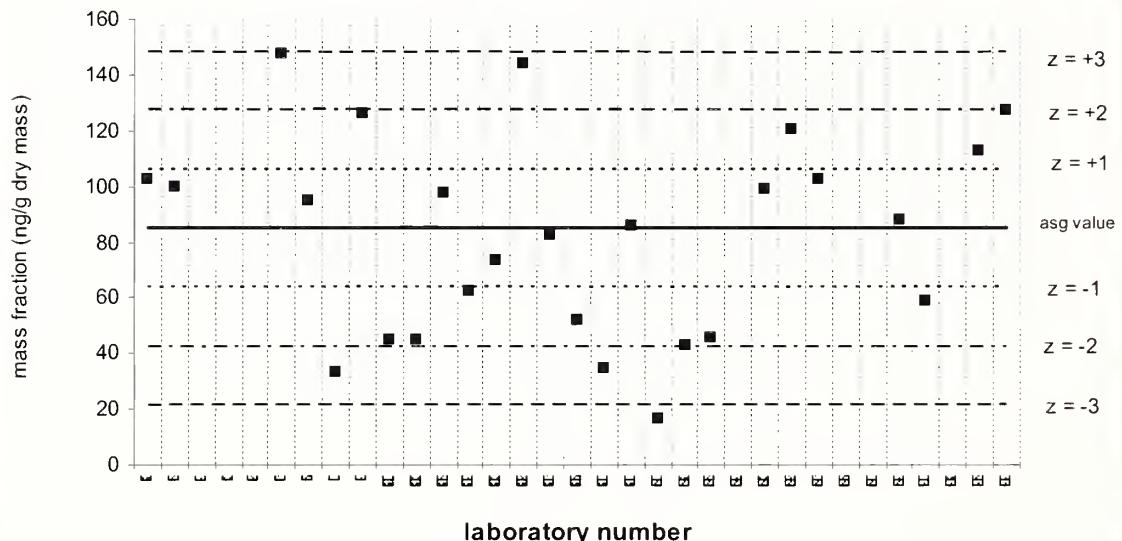
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

biphenyl**QA10SED01**Assigned value = 84.9 ng/g (dry mass) $s = 34.4$ ng/g (dry mass) 95% CI = 13.5 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 26

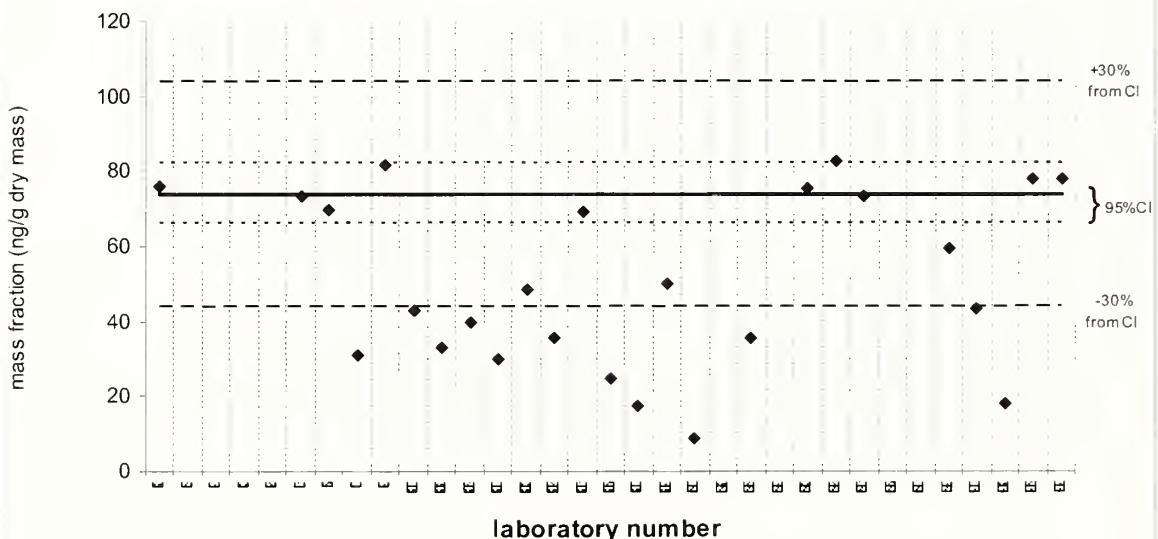


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

biphenyl**SRM 1941b**

Reference Value = 74 ng/g (dry mass) ; 95% CI 8 ng/g (dry mass)

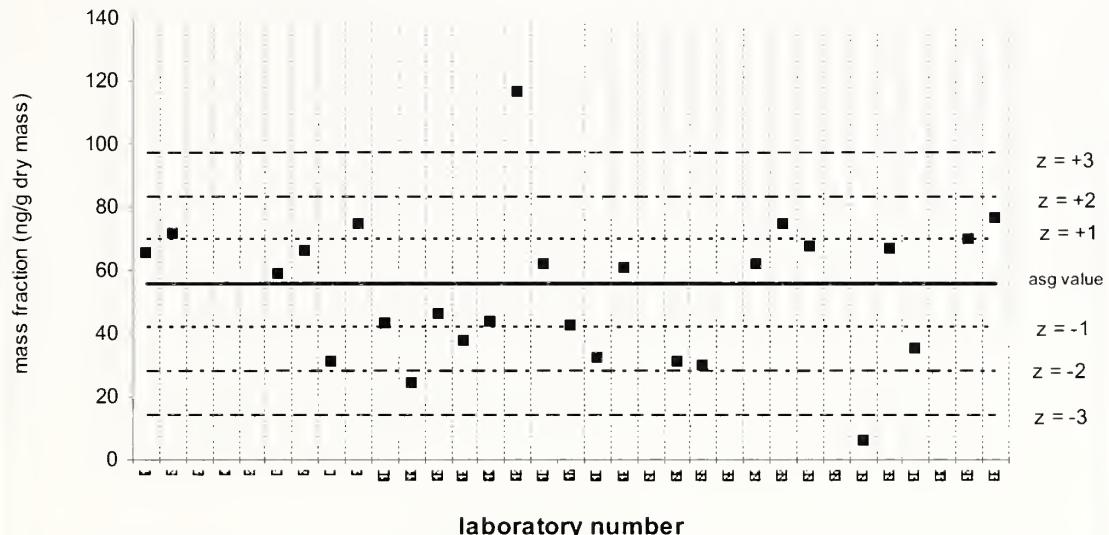
Reported Results: 28 Quantitative Results: 25



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

acenaphthene**QA10SED01**Assigned value = 55.5 ng/g (dry mass) $s = 21.0$ ng/g (dry mass) 95% CI = 8.2 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 27 Lab 23 reported 337 ng/g (dry mass)

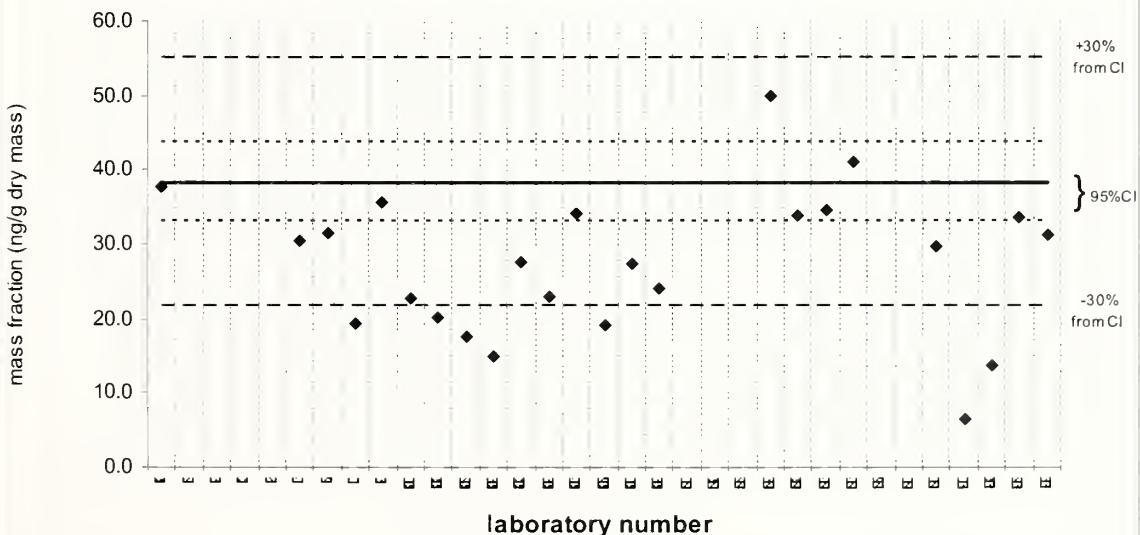


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

acenaphthene**SRM 1941b**

Reference Value = 38.4 ng/g (dry mass) ; 95% CI 5.2 ng/g (dry mass)

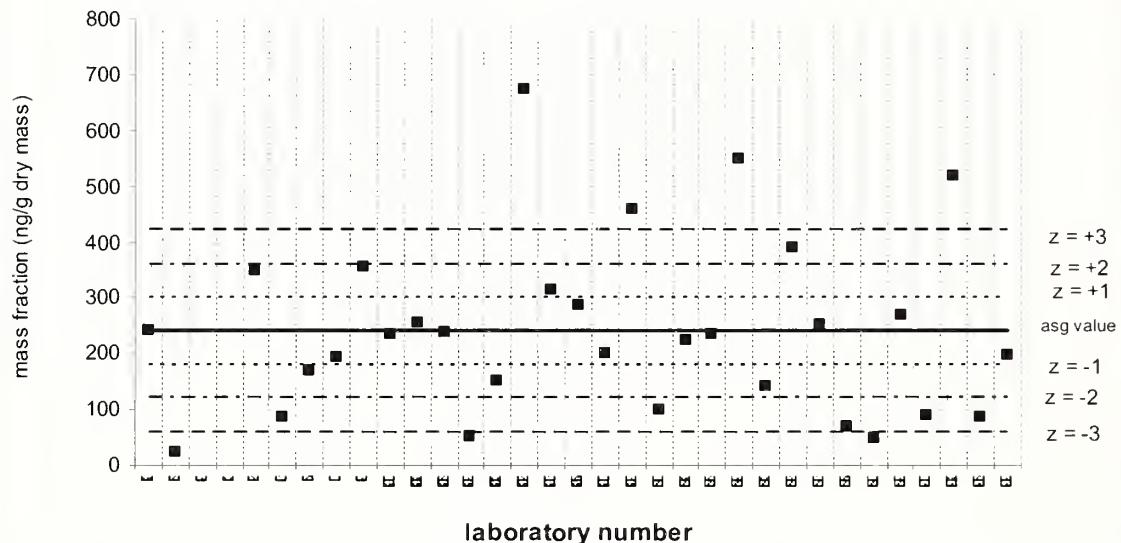
Reported Results: 27 Quantitative Results: 24



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

acenaphthylene**QA10SED01**Assigned value = 241 ng/g (dry mass) $s = 156$ ng/g (dry mass) 95% CI = 55 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 31

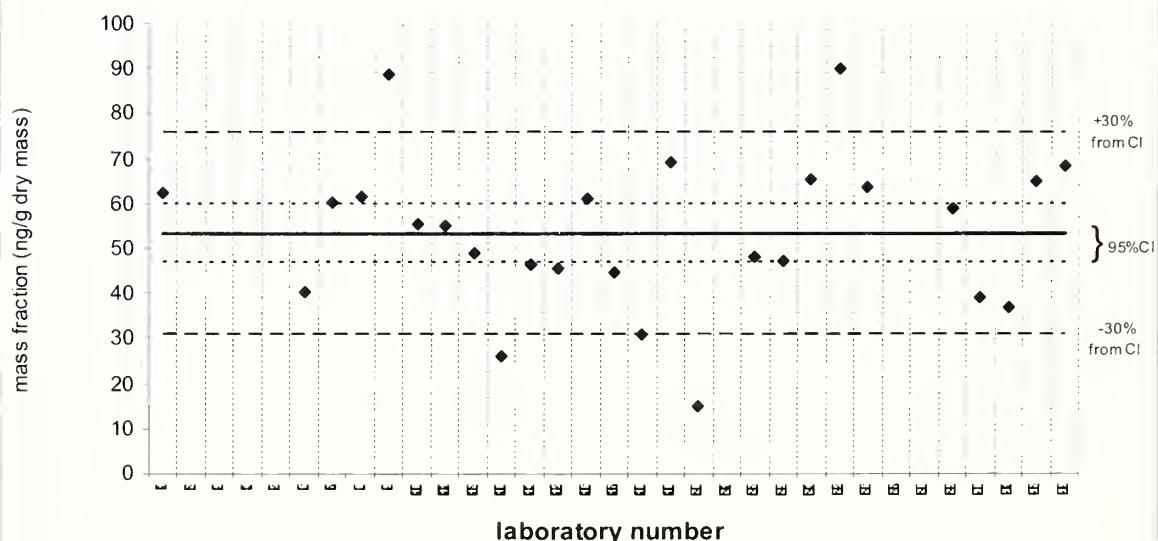


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

acenaphthylene**SRM 1941b**

Reference Value = 53.3 ng/g (dry mass); 95% CI 6.4 ng/g (dry mass)

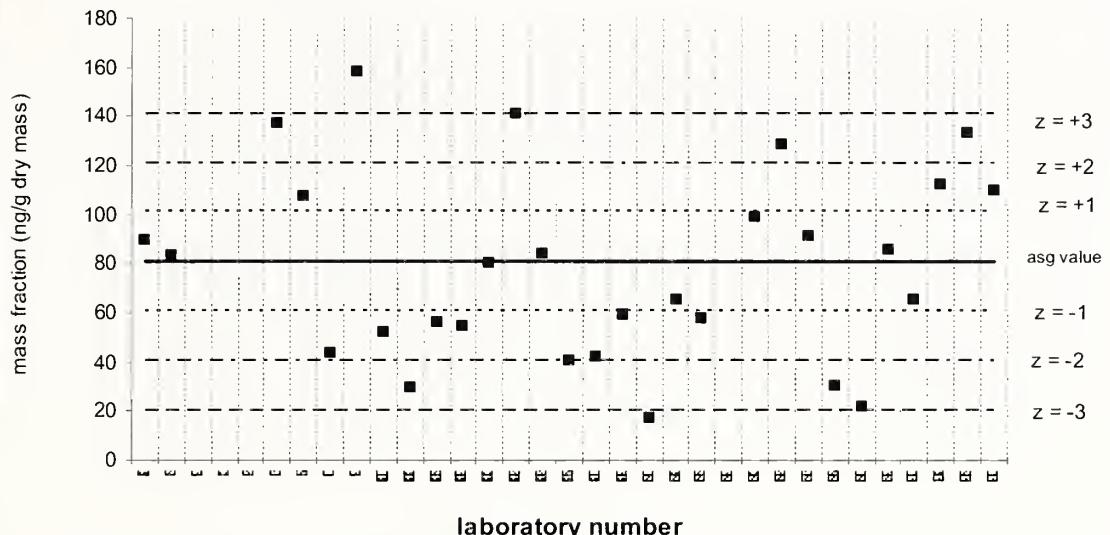
Reported Results: 28 Quantitative Results: 26



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

fluorene**QA10SED01**Assigned value = 80.8 ng/g (dry mass) $s = 37.2$ ng/g (dry mass) 95% CI = 13.8 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 30 Lab 23 reported 272 ng/g (dry mass)

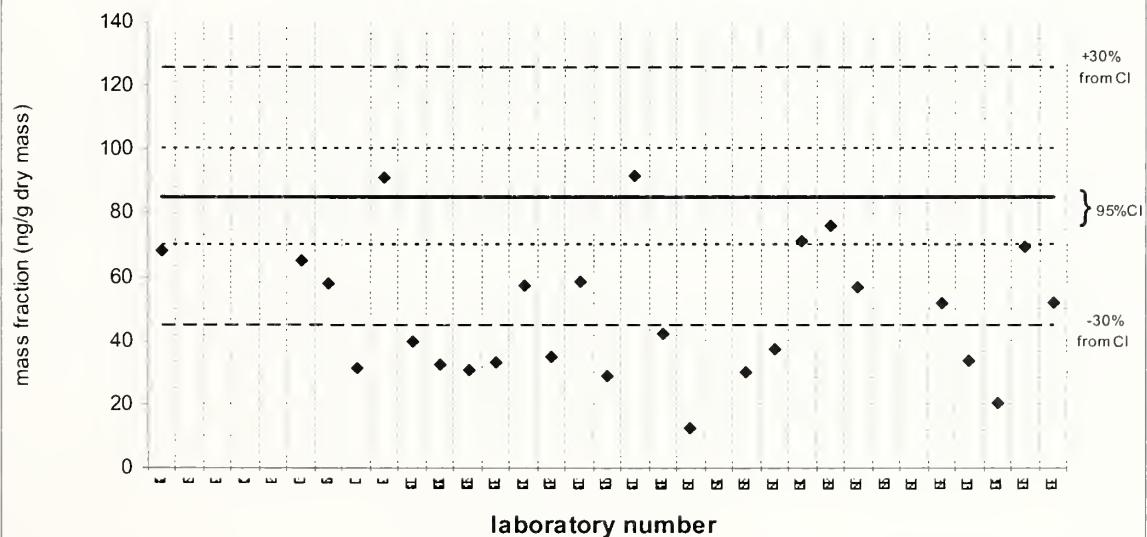


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

fluorene**SRM 1941b**

Certified Value = 85 ng/g (dry mass) ; 95% CI 15 ng/g (dry mass)

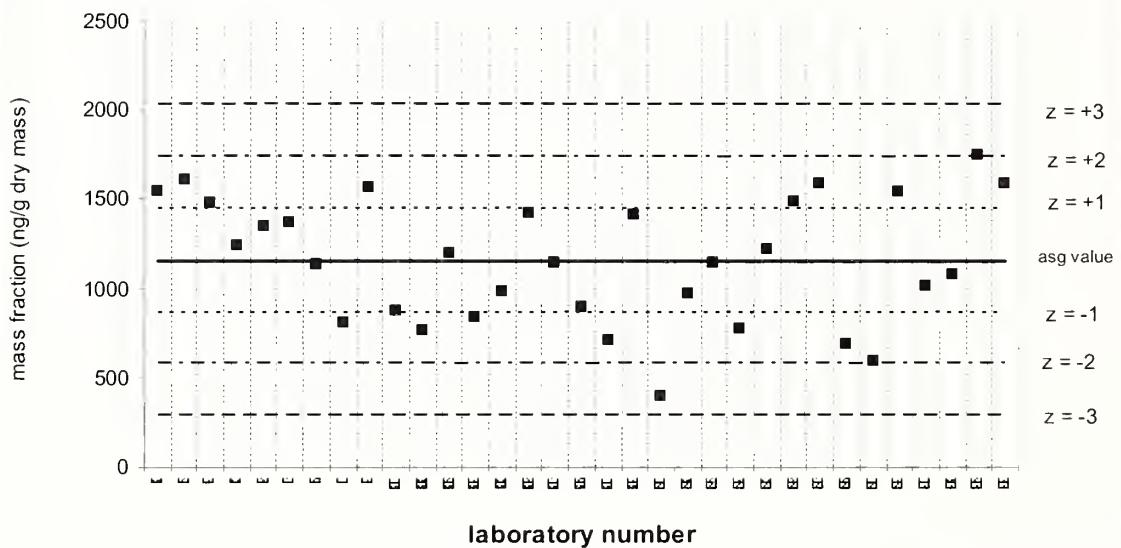
Reported Results: 28 Quantitative Results: 26



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

phenanthrene**QA10SED01**Assigned value = 1160 ng/g (dry mass) $s = 350$ ng/g (dry mass) 95% CI = 119 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

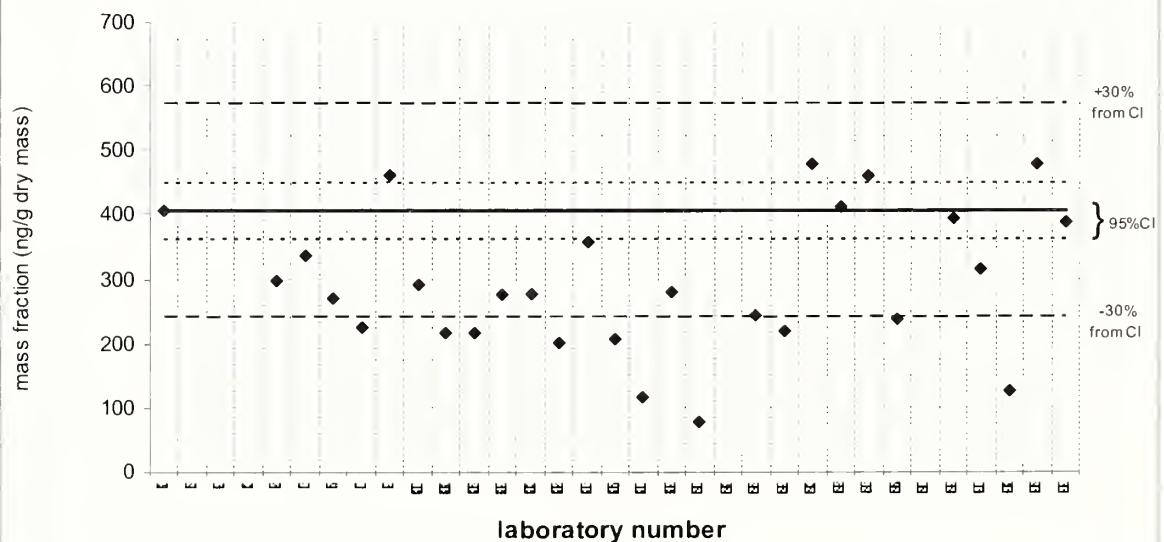


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

phenanthrene**SRM 1941b**

Certified Value = 406 ng/g (dry mass) ; 95% CI 44 ng/g (dry mass)

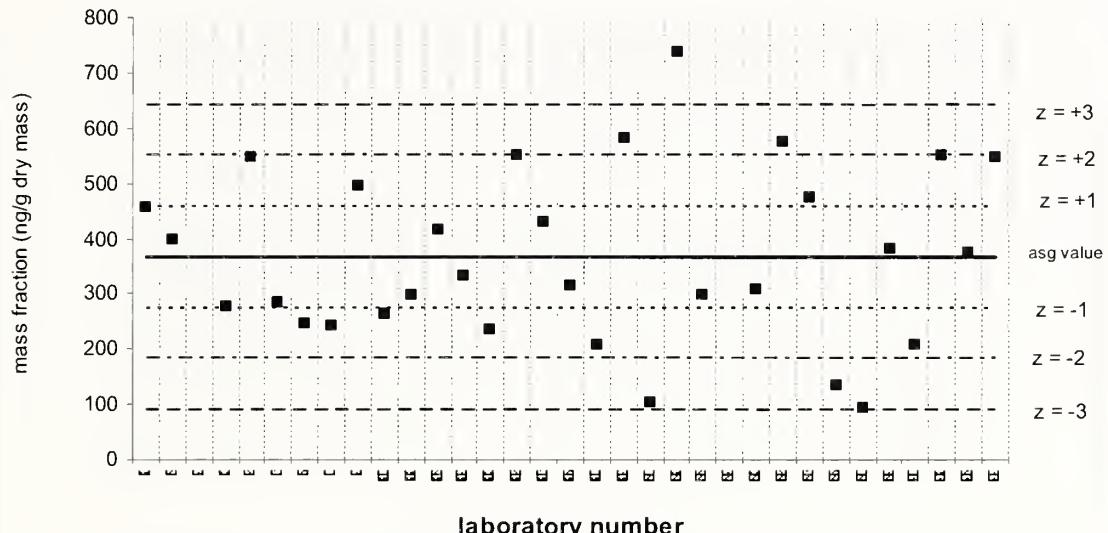
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

anthracene**QA10SED01**Assigned value = 366 ng/g (dry mass) $s = 158$ ng/g (dry mass) 95% CI = 55 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 31

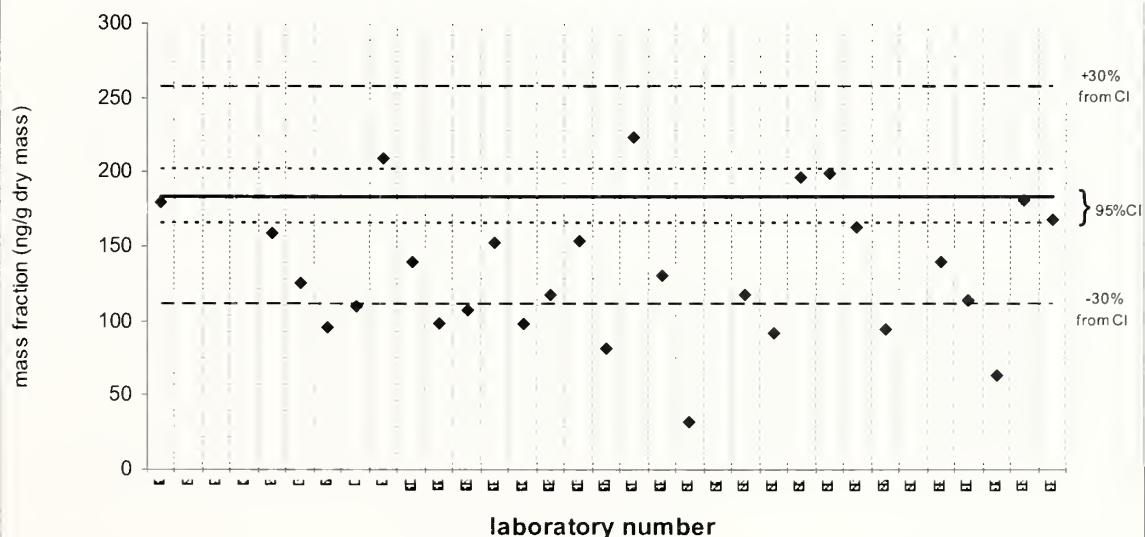


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

anthracene**SRM 1941b**

Certified Value = 184 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

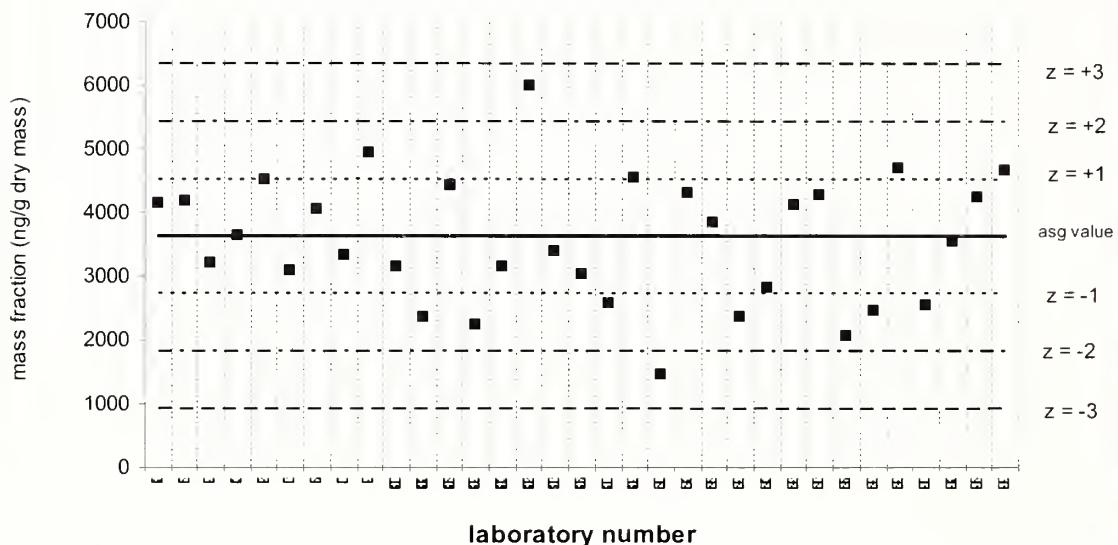
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

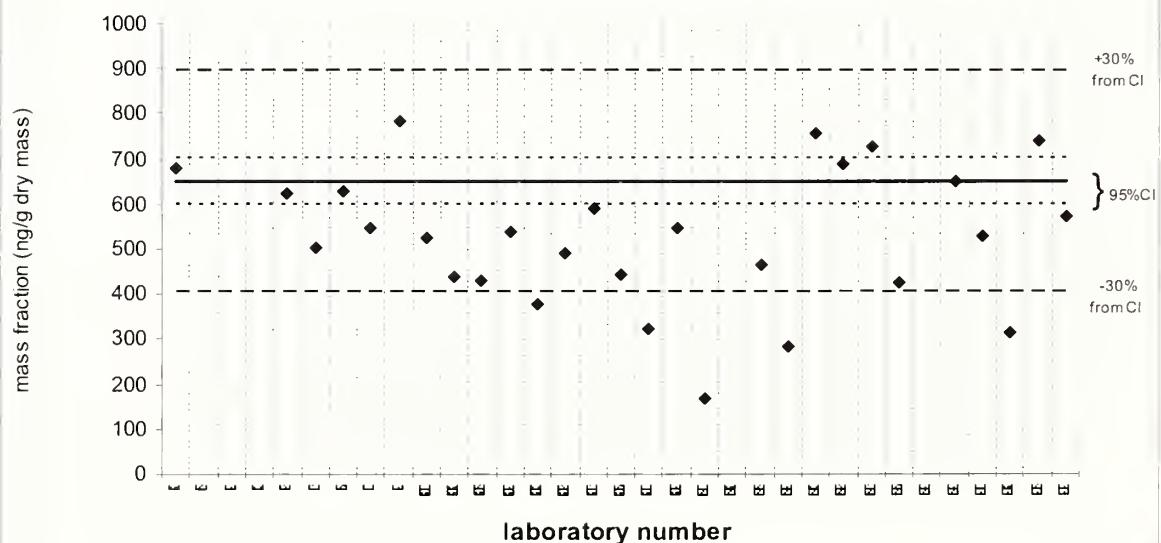
fluoranthene**QA10SED01**Assigned value = 3623 ng/g (dry mass) $s = 941$ ng/g (dry mass) 95% CI = 326 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

**fluoranthene****SRM 1941b**

Certified Value = 651 ng/g (dry mass) ; 95% CI 50 ng/g (dry mass)

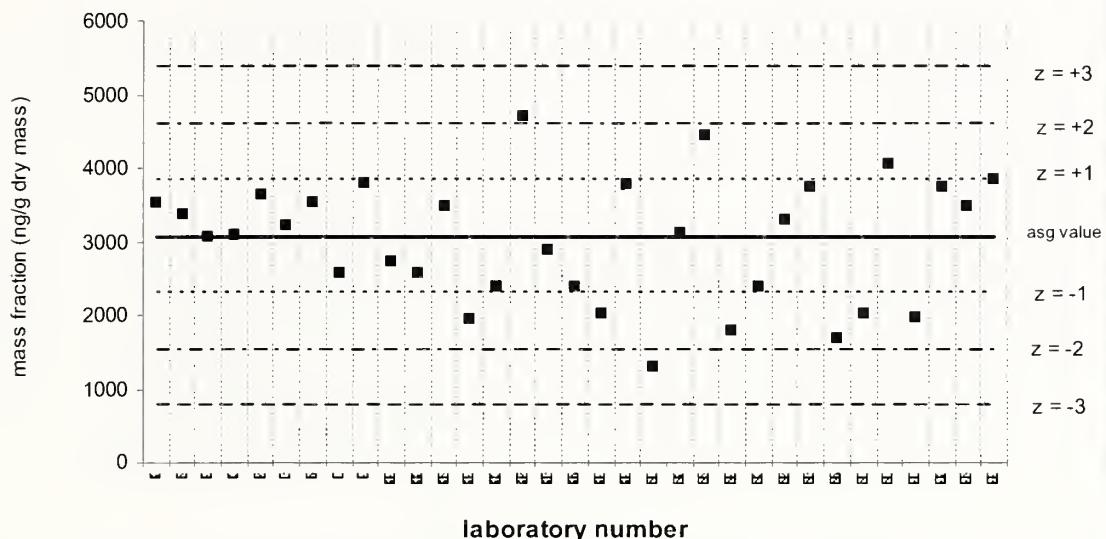
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

pyrene**QA10SED01**Assigned value = 3071 ng/g (dry mass) $s = 793$ ng/g (dry mass) 95% CI = 275 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

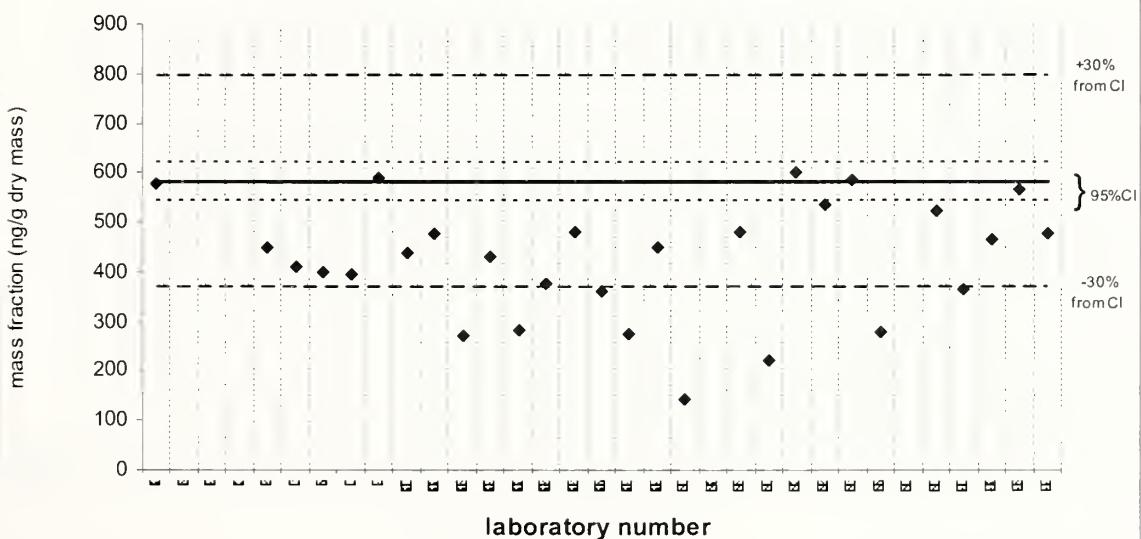


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

pyrene**SRM 1941b**

Certified Value = 581 ng/g (dry mass) ; 95% CI 39 ng/g (dry mass)

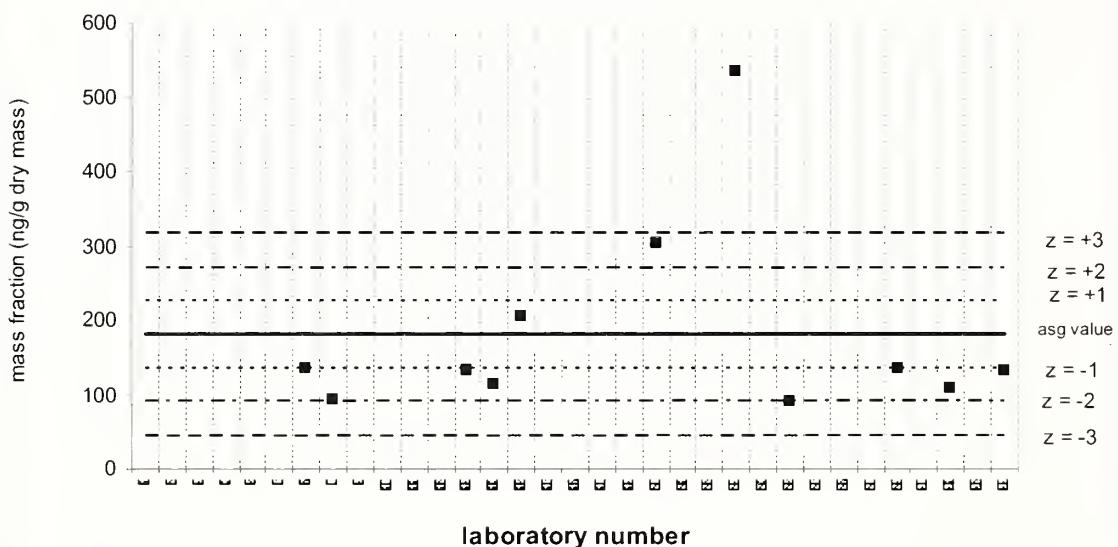
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[b]fluorene**QA10SED01**Assigned value = 181 ng/g (dry mass) $s = 132$ ng/g (dry mass) 95% CI = 78 ng/g (dry mass)

Reported Results: 11 Quantitative Results: 11

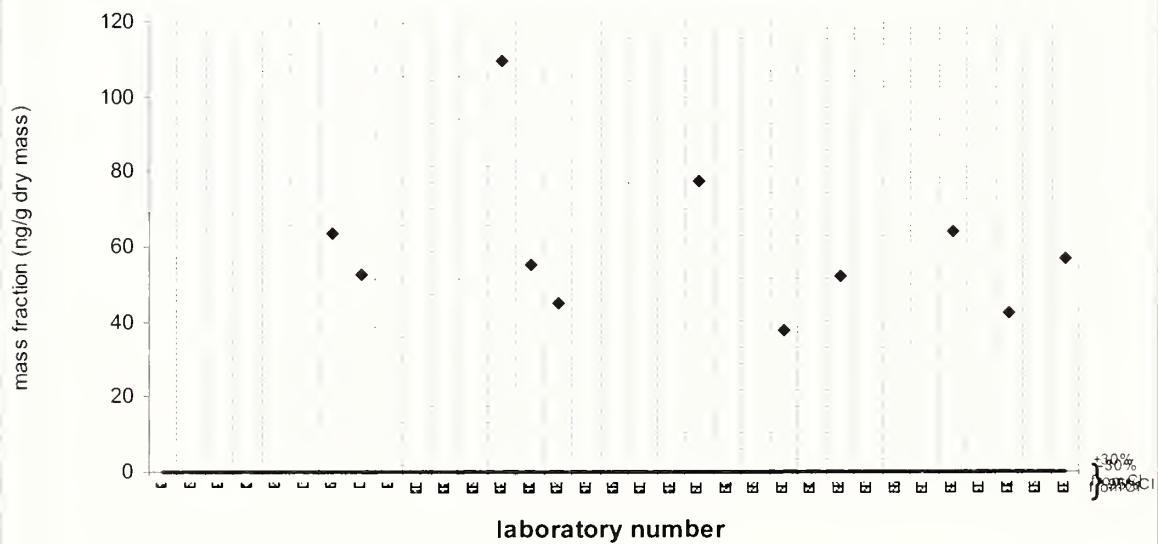


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

benzo[b]fluorene**SRM 1941b**

Target Value = no target ng/g (dry mass)

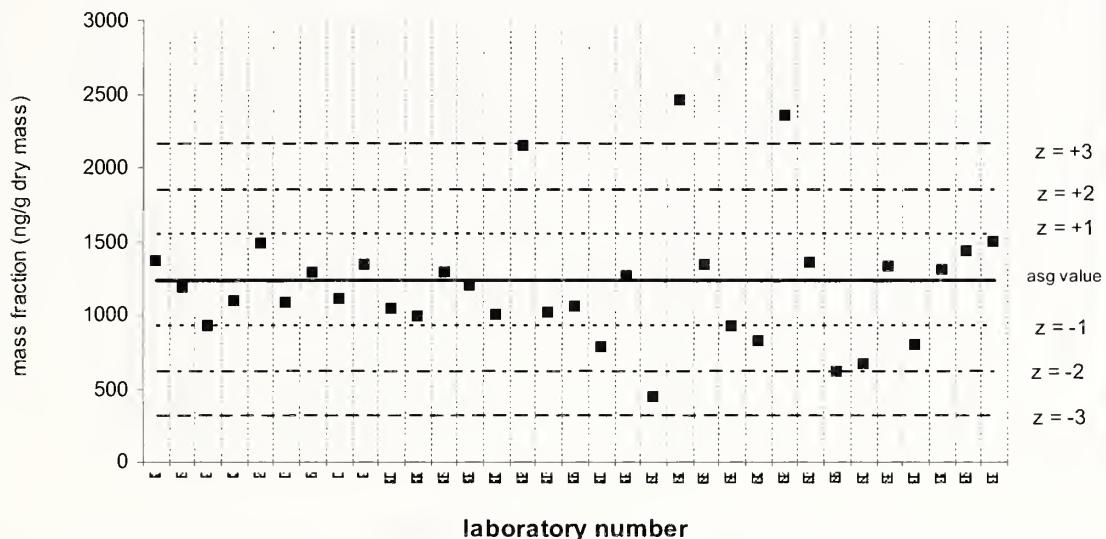
Reported Results: 11 Quantitative Results: 11



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benz[a]anthracene**QA10SED01**Assigned value = 1232 ng/g (dry mass) $s = 425$ ng/g (dry mass) 95% CI = 147 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

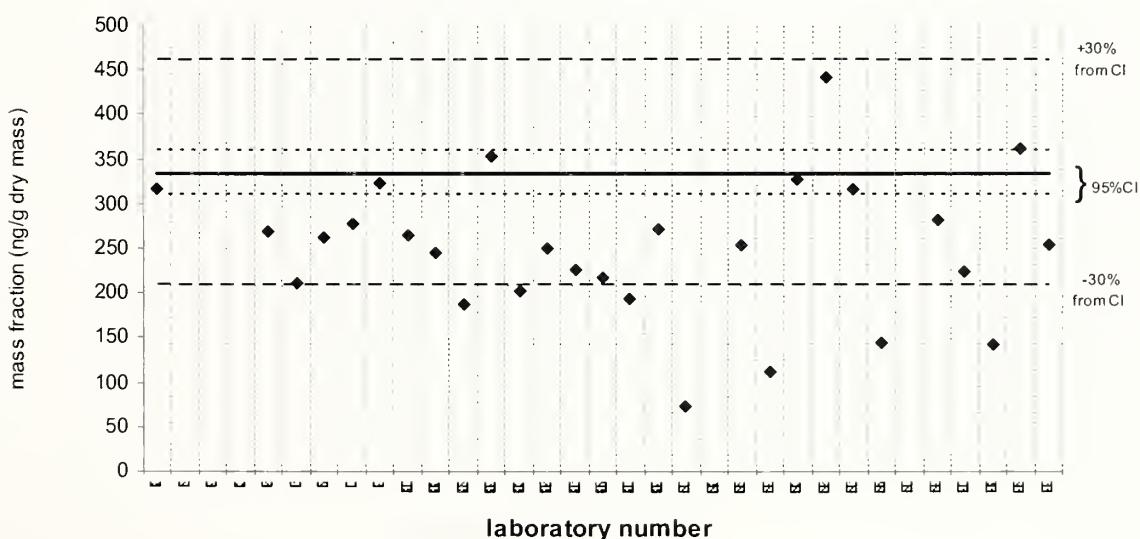


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

benz[a]anthracene**SRM 1941b**

Certified Value = 335 ng/g (dry mass) ; 95% CI 25 ng/g (dry mass)

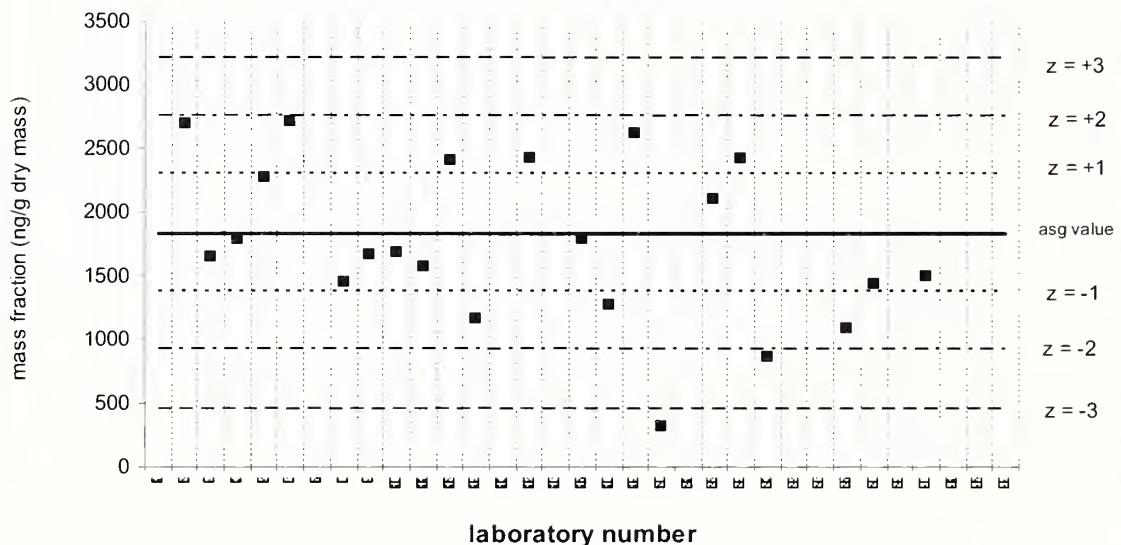
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

chrysene**QA10SED01**Assigned value = 1839 ng/g (dry mass) $s = 559$ ng/g (dry mass) 95% CI = 239 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 22

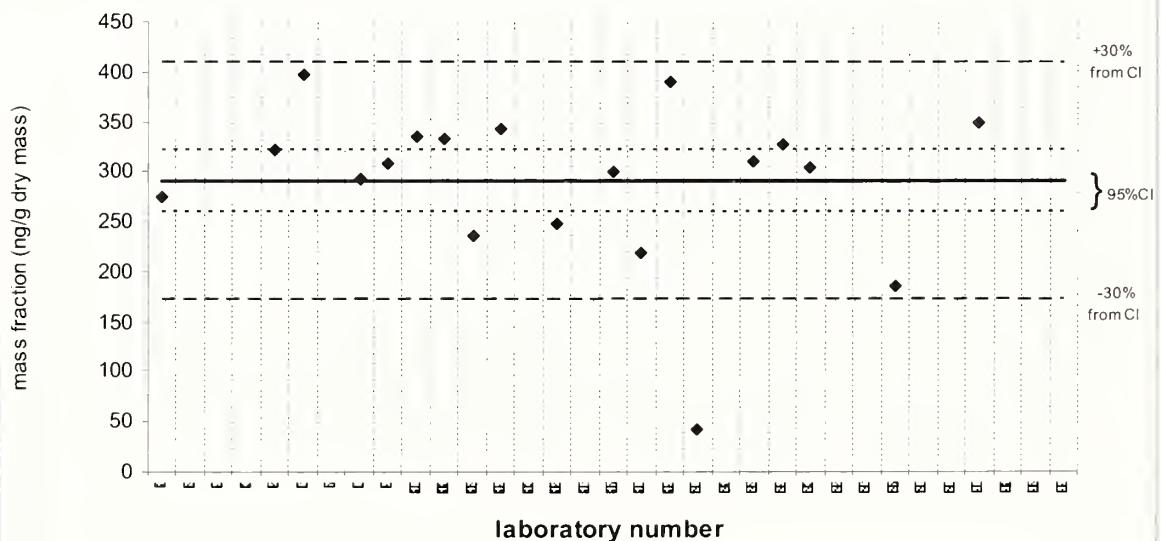


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

chrysene**SRM 1941b**

Certified Value = 291 ng/g (dry mass) ; 95% CI 31 ng/g (dry mass)

Reported Results: 19 Quantitative Results: 19

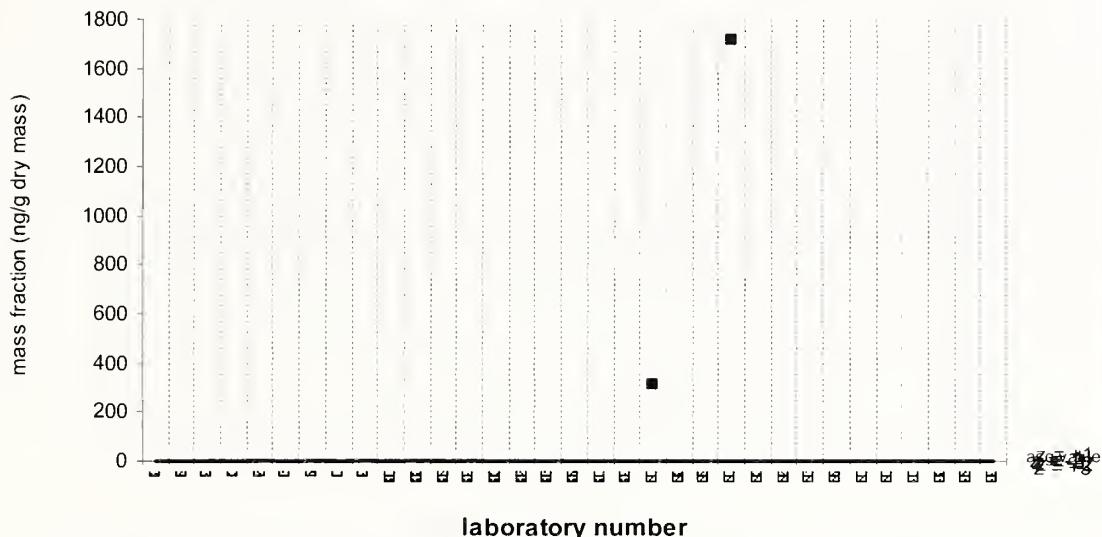


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

triphenylene**QA10SED01**

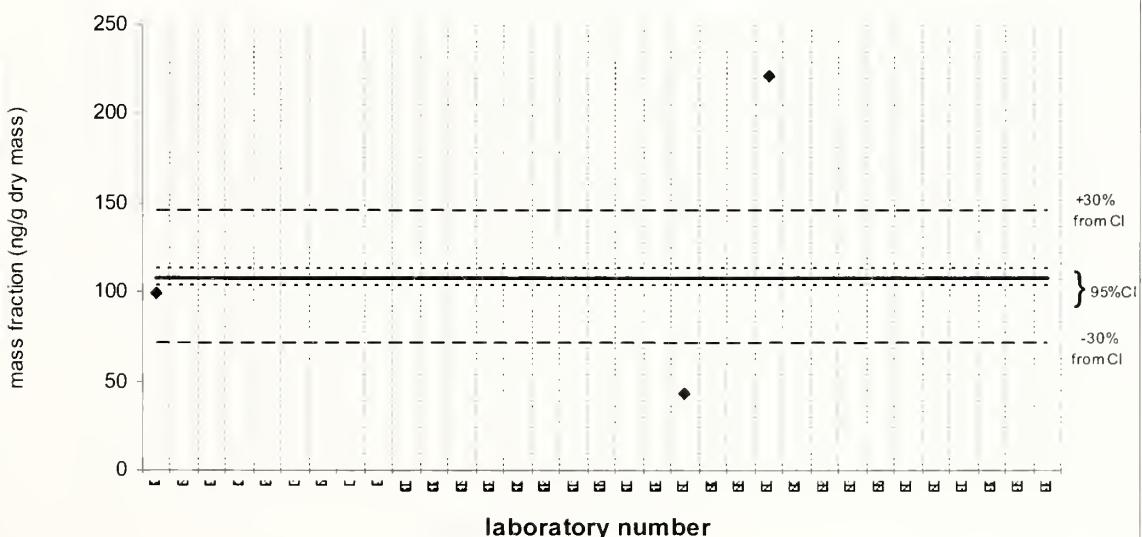
Assigned value = No target ng/g (dry mass)

Reported Results: 2 Quantitative Results: 2

**triphenylene****SRM 1941b**

Certified Value = 108 ng/g (dry mass) ; 95% CI 5 ng/g (dry mass)

Reported Results: 3 Quantitative Results: 3



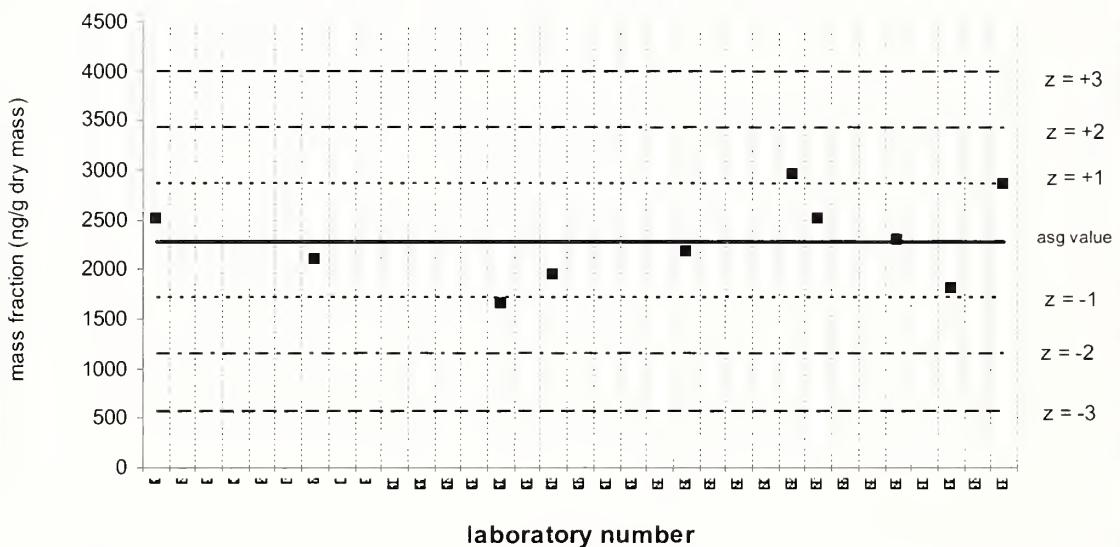
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

chrysene/triphenylene

QA10SED01

Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 10



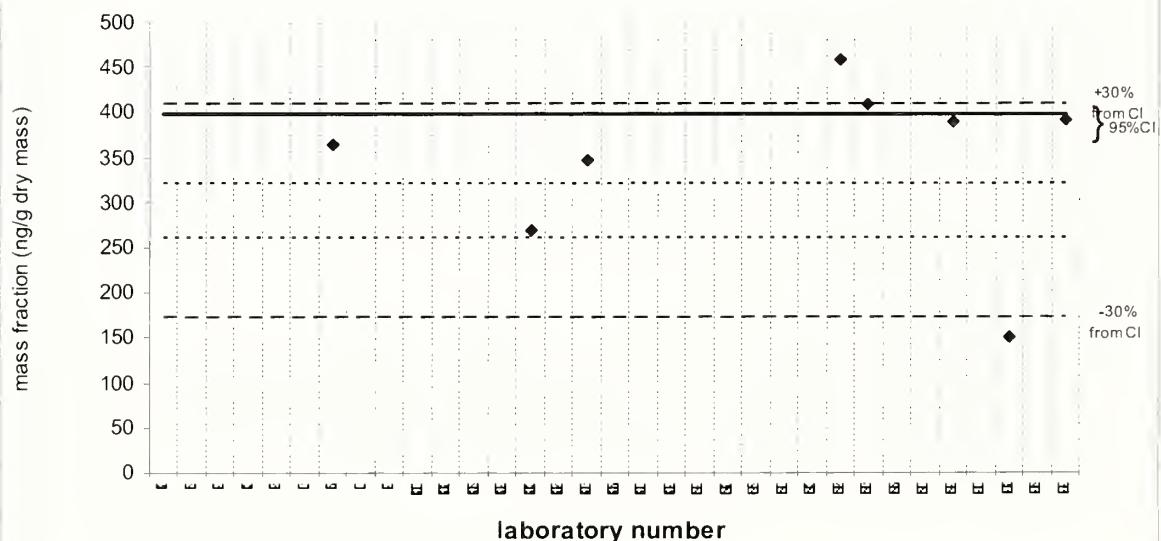
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

chrysene/triphenylene

SRM 1941b

Target Value = 399 ng/g (dry mass) ; 95% CI 36 ng/g (dry mass)

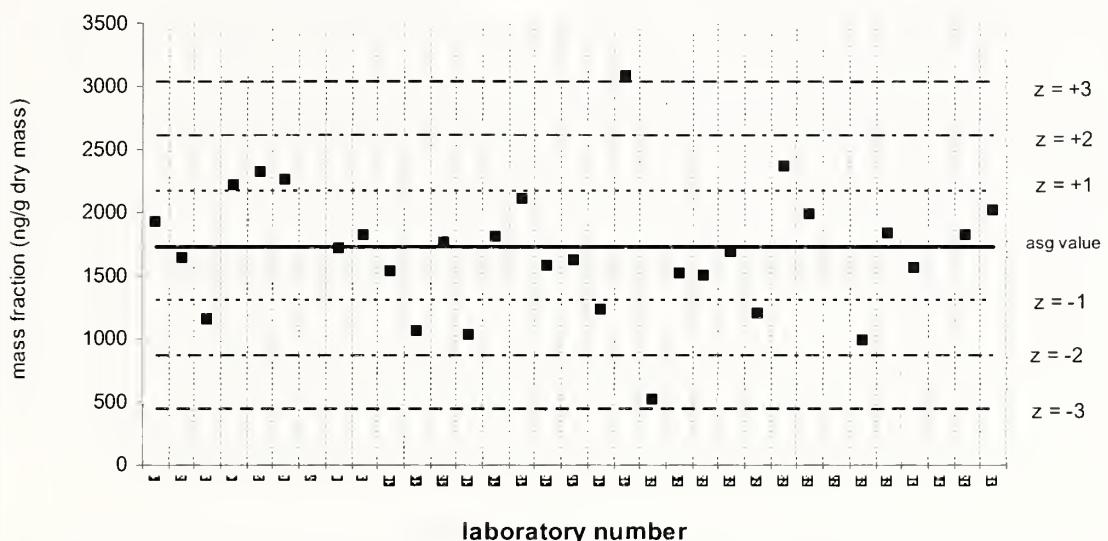
Reported Results: 8 Quantitative Results: 8



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

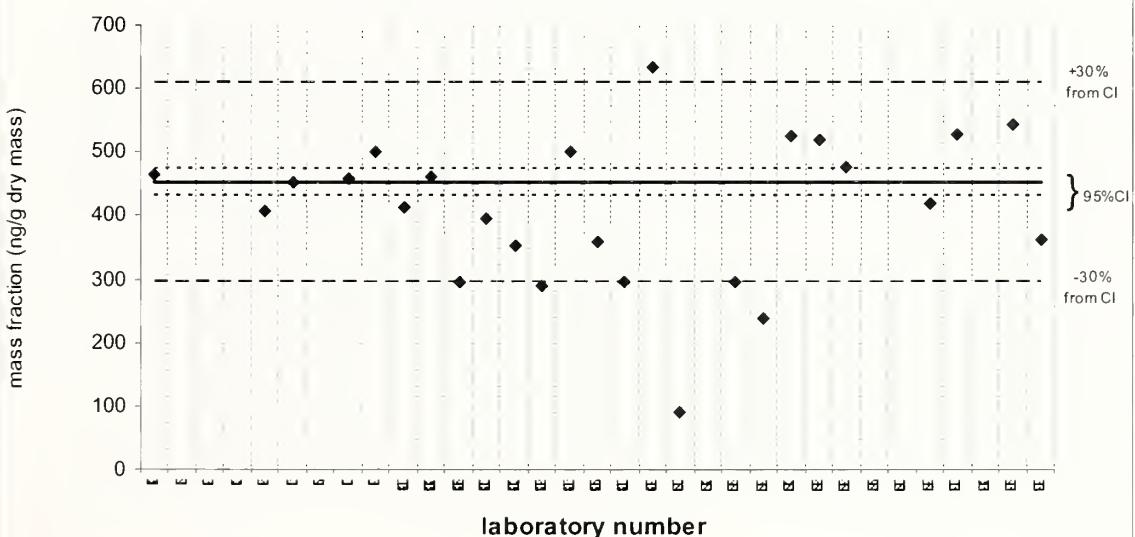
benzo[b]fluoranthene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 30

**benzo[b]fluoranthene****SRM 1941b**

Certified Value = 453 ng/g (dry mass) ; 95% CI 21 ng/g (dry mass)

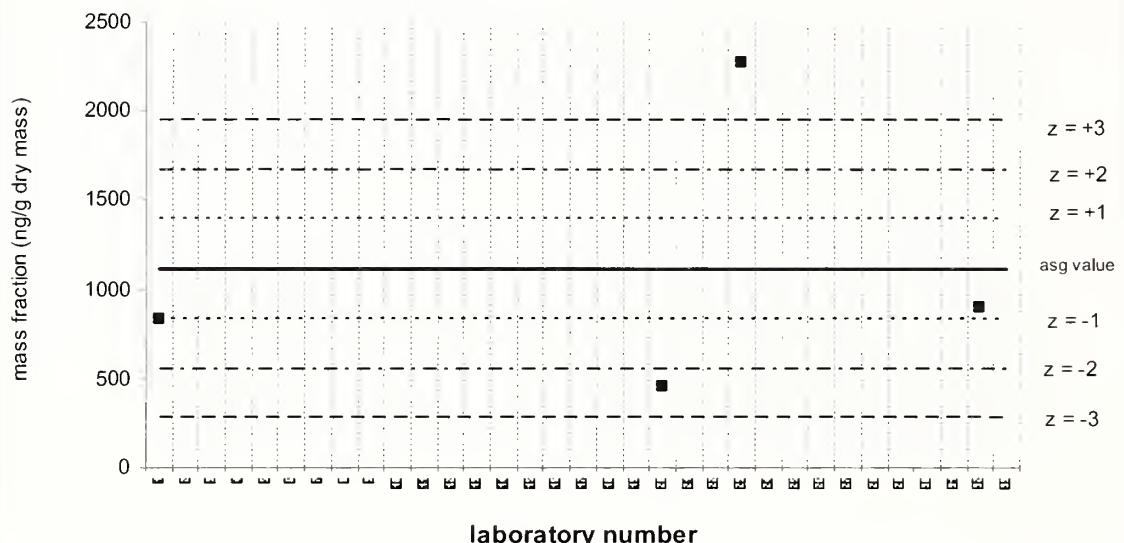
Reported Results: 25 Quantitative Results: 25



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

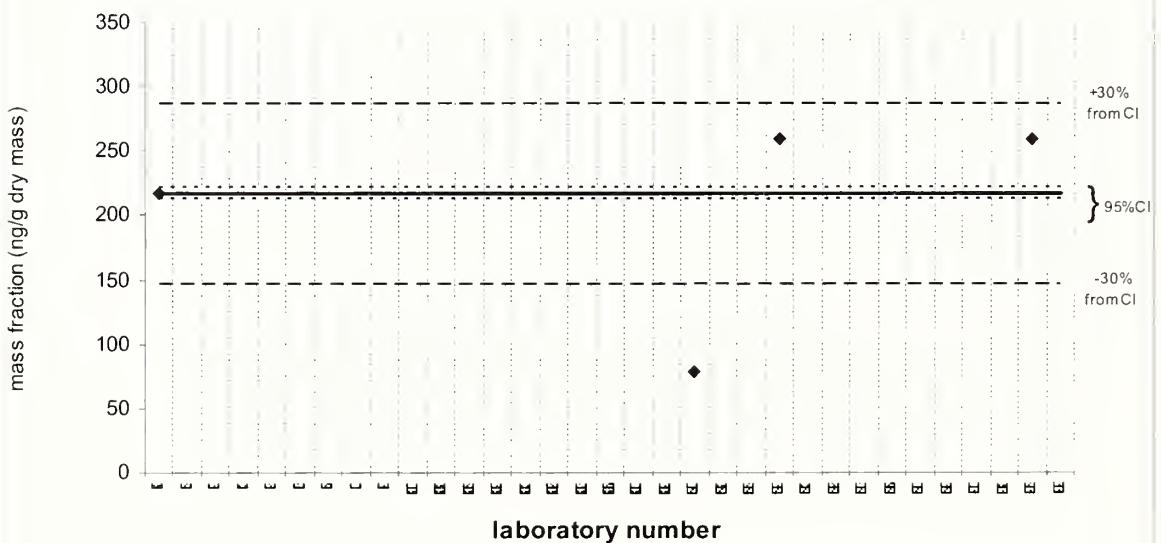
benzo[j]fluoranthene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 4 Quantitative Results: 4

**benzo[j]fluoranthene****SRM 1941b**

Reference Value = 217 ng/g (dry mass) ; 95% CI 5 ng/g (dry mass)

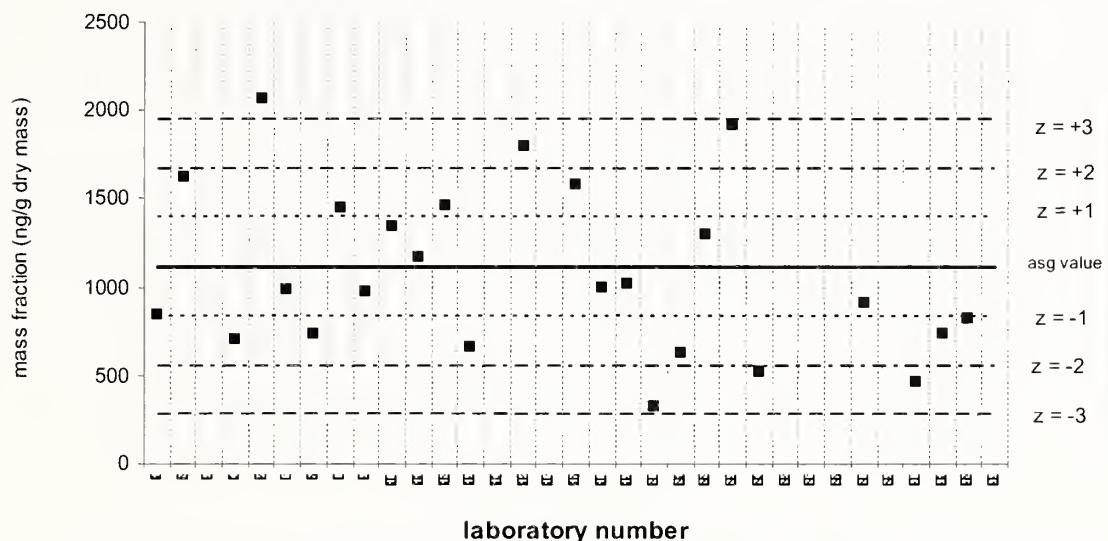
Reported Results: 4 Quantitative Results: 4



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[k]fluoranthene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 25

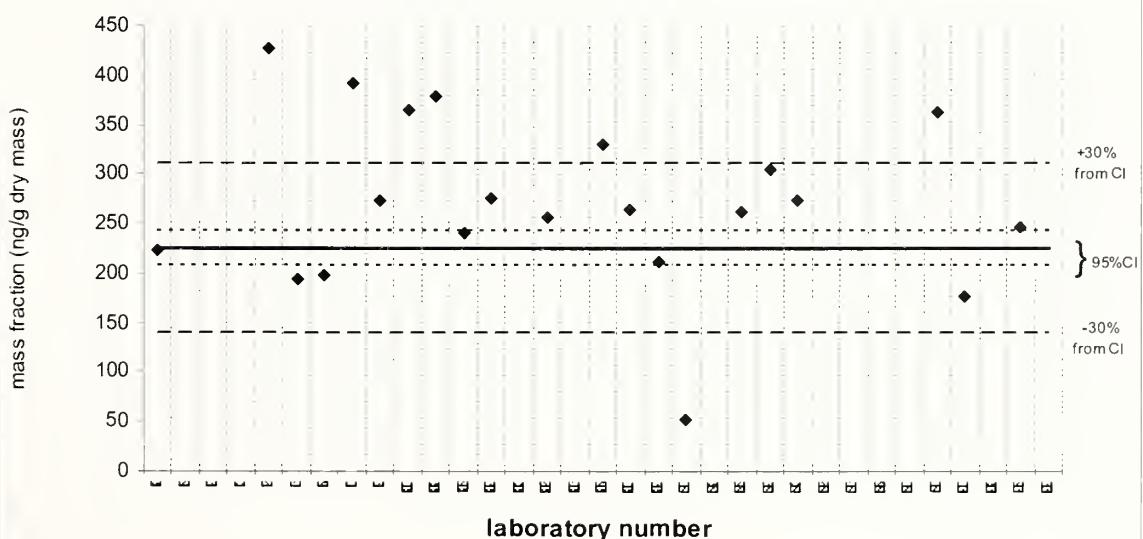


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

benzo[k]fluoranthene**SRM 1941b**

Certified Value = 225 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

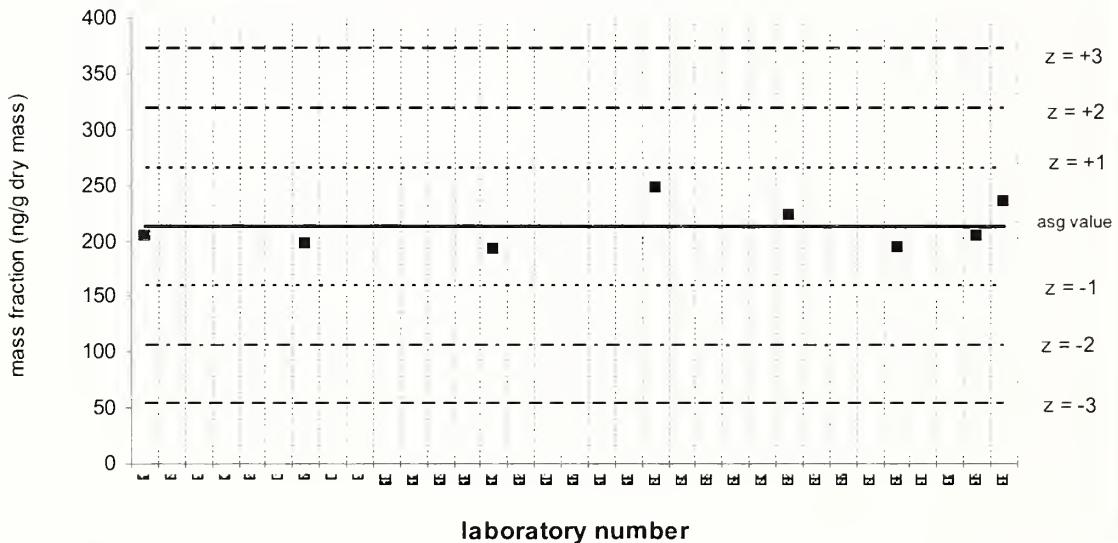
Reported Results: 22 Quantitative Results: 21



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

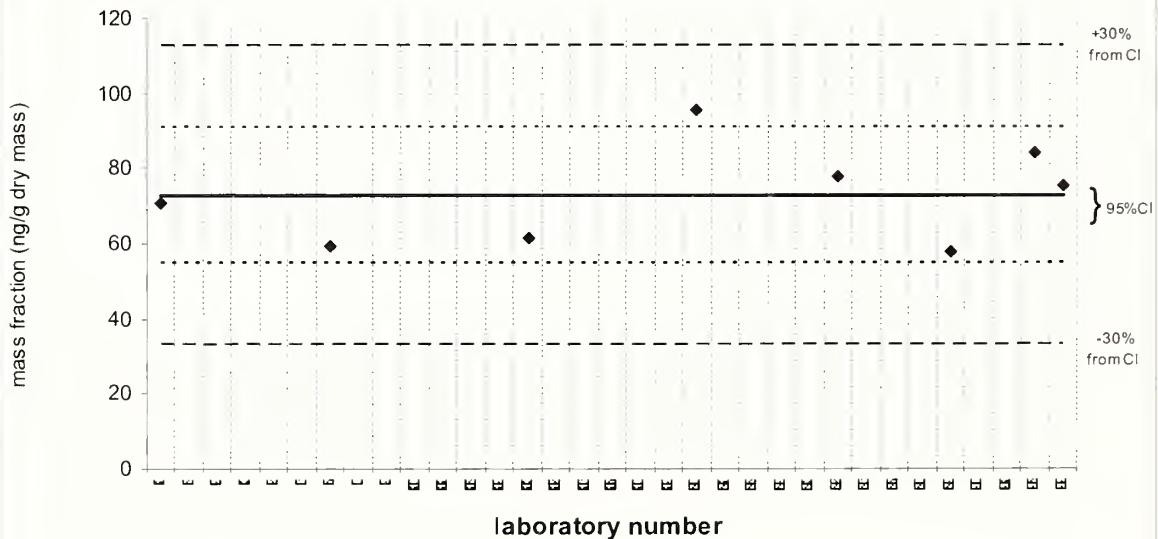
benzo[a]fluoranthene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 8

**benzo[a]fluoranthene****SRM 1941b**

Certified Value = 73 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

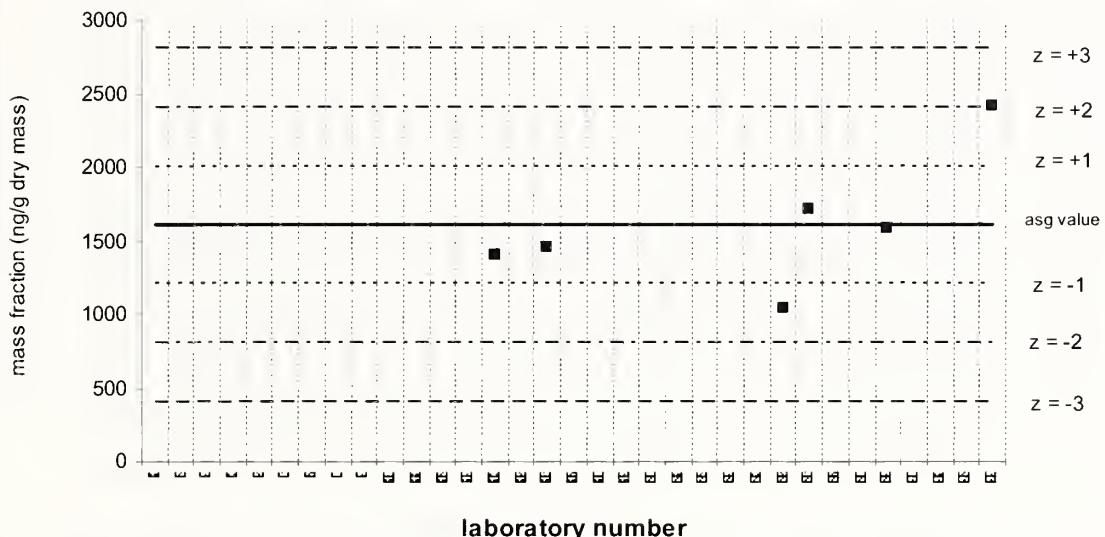
Reported Results: 8 Quantitative Results: 8



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[j+k]fluoranthene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 6 Quantitative Results: 6

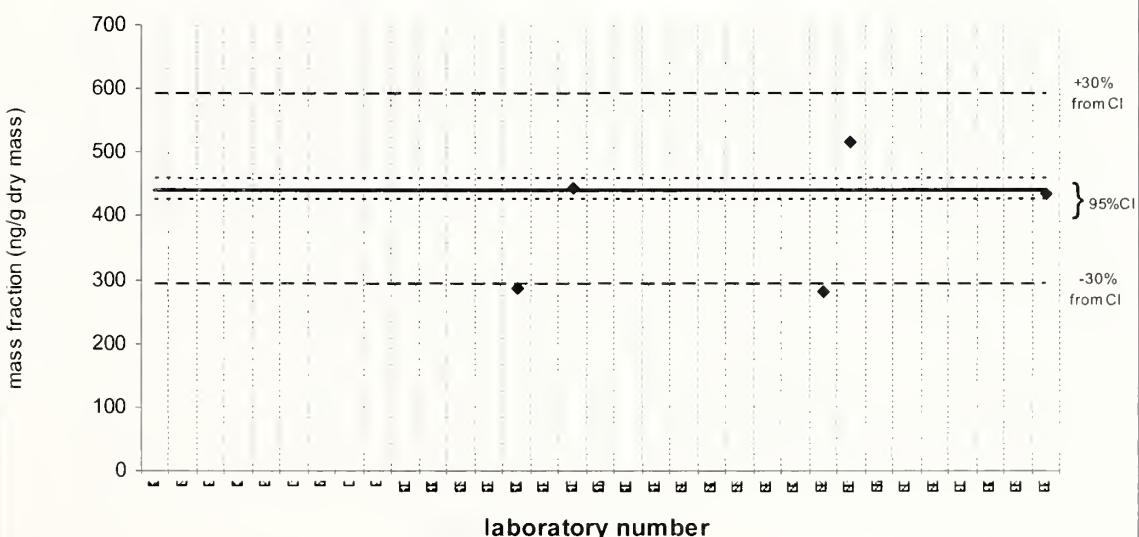


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

benzo[j+k]fluoranthene**SRM 1941b**

Target Value = 442 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

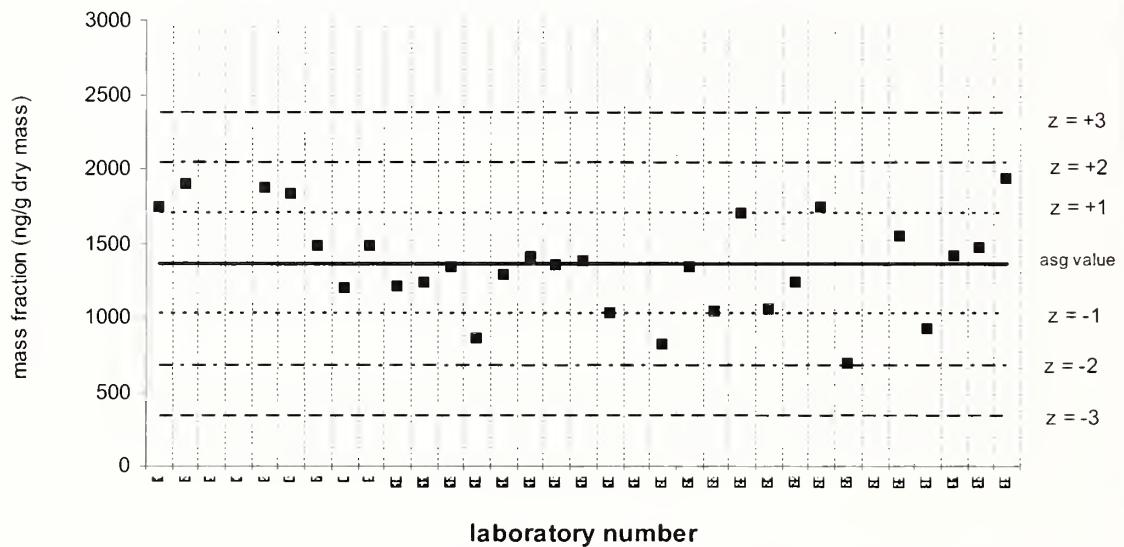
Reported Results: 5 Quantitative Results: 5



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

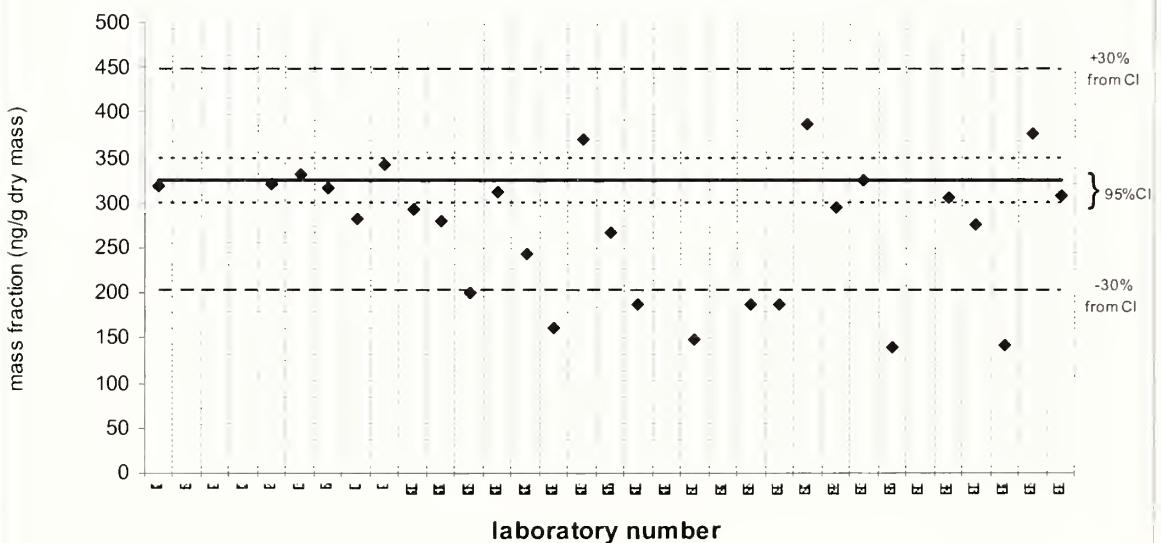
benzo[e]pyrene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 29 Quantitative Results: 29

**benzo[e]pyrene****SRM 1941b**

Certified Value = 325 ng/g (dry mass) ; 95% CI 25 ng/g (dry mass)

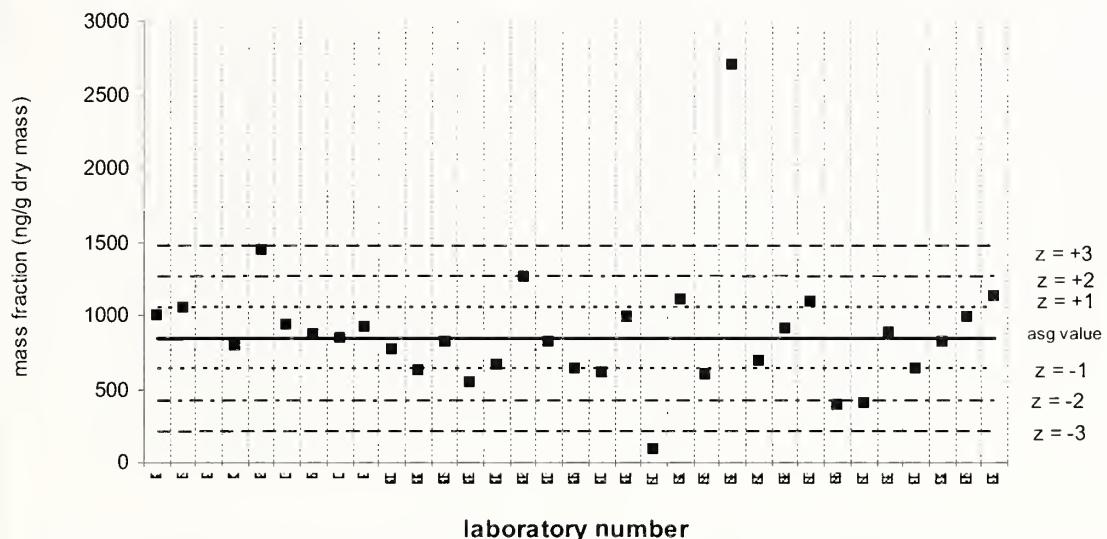
Reported Results: 27 Quantitative Results: 27



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[a]pyrene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 32

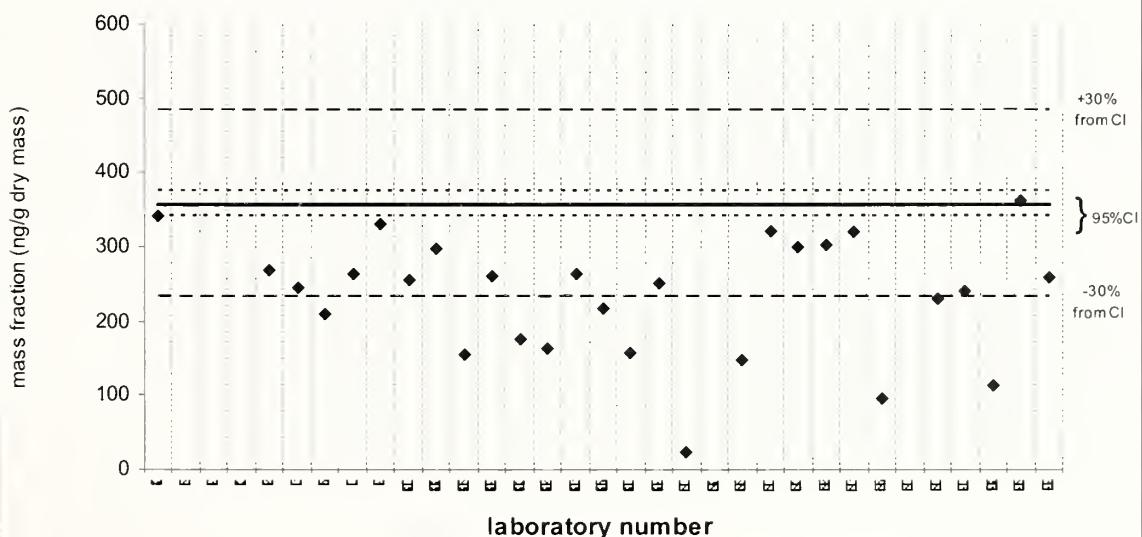


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

benzo[a]pyrene**SRM 1941b**

Certified Value = 358 ng/g (dry mass) ; 95% CI 17 ng/g (dry mass)

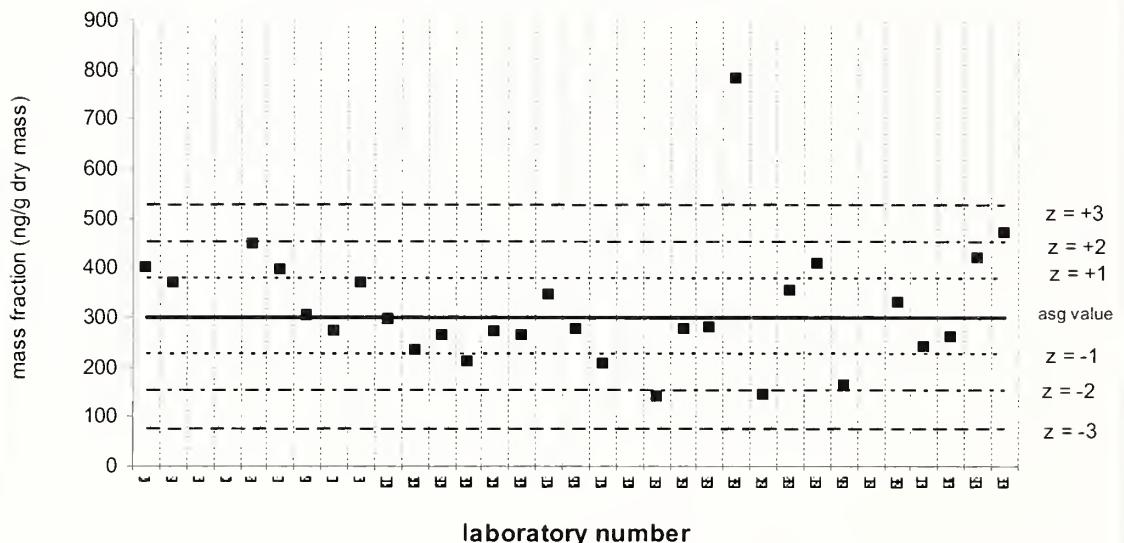
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

perylene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 29 Quantitative Results: 29

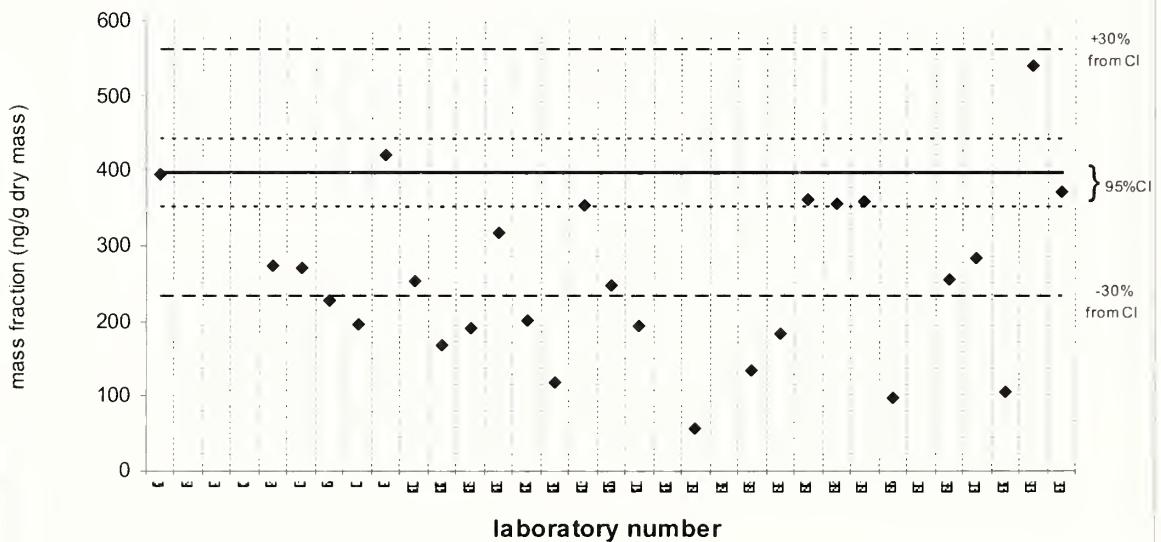


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

perylene**SRM 1941b**

Certified Value = 397 ng/g (dry mass) ; 95% CI 45 ng/g (dry mass)

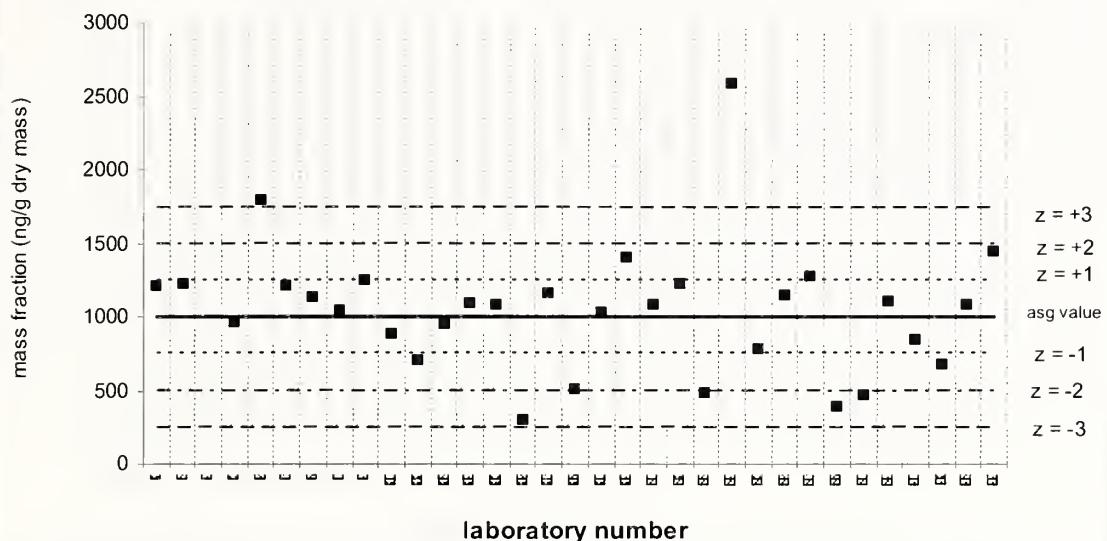
Reported Results: 27 Quantitative Results: 27



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

indeno[1,2,3-cd]pyrene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 32

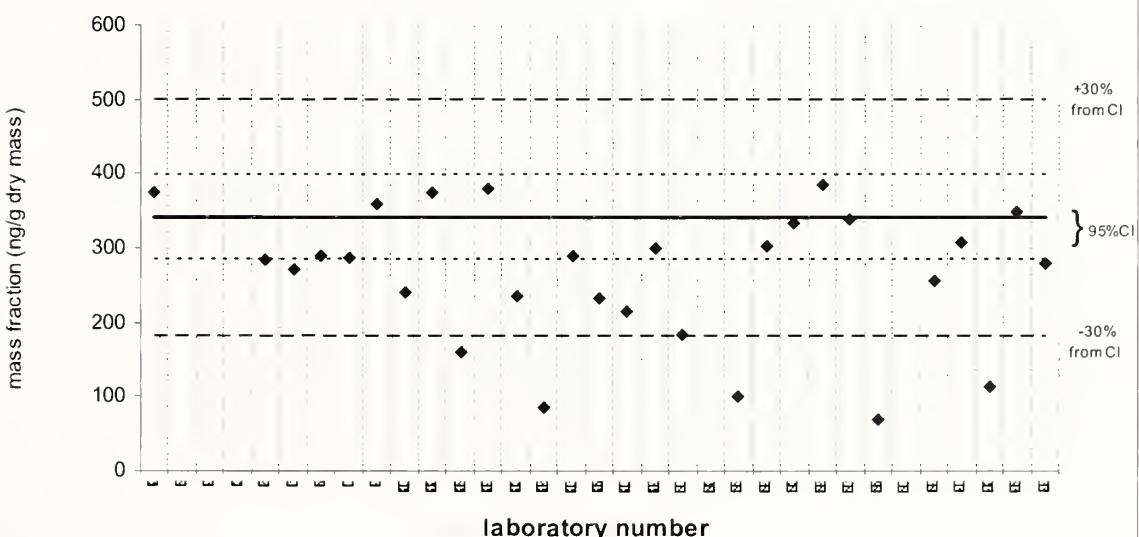


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

indeno[1,2,3-cd]pyrene**SRM 1941b**

Certified Value = 341 ng/g (dry mass); 95% CI 57 ng/g (dry mass)

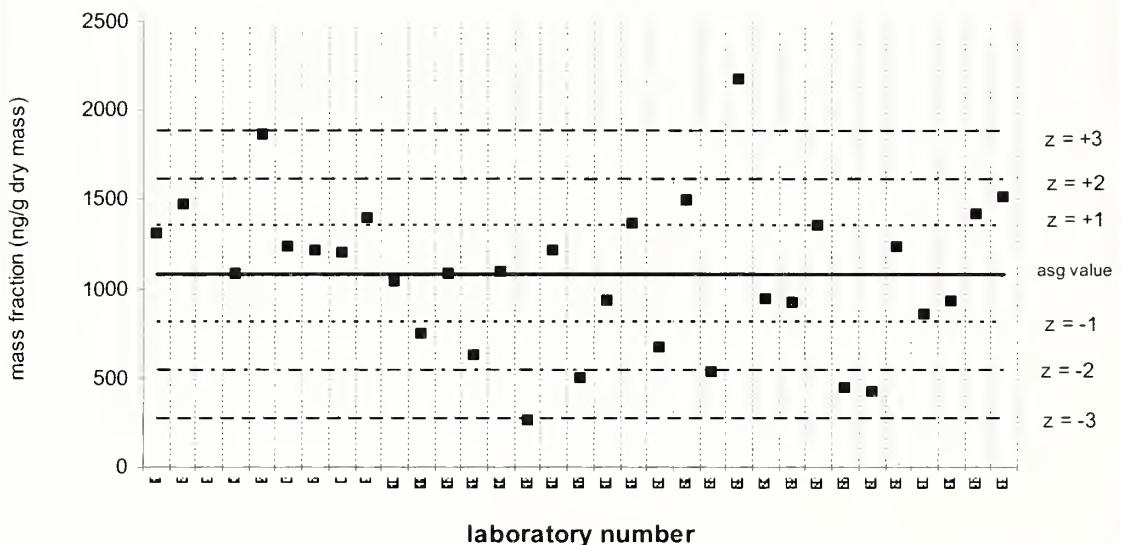
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

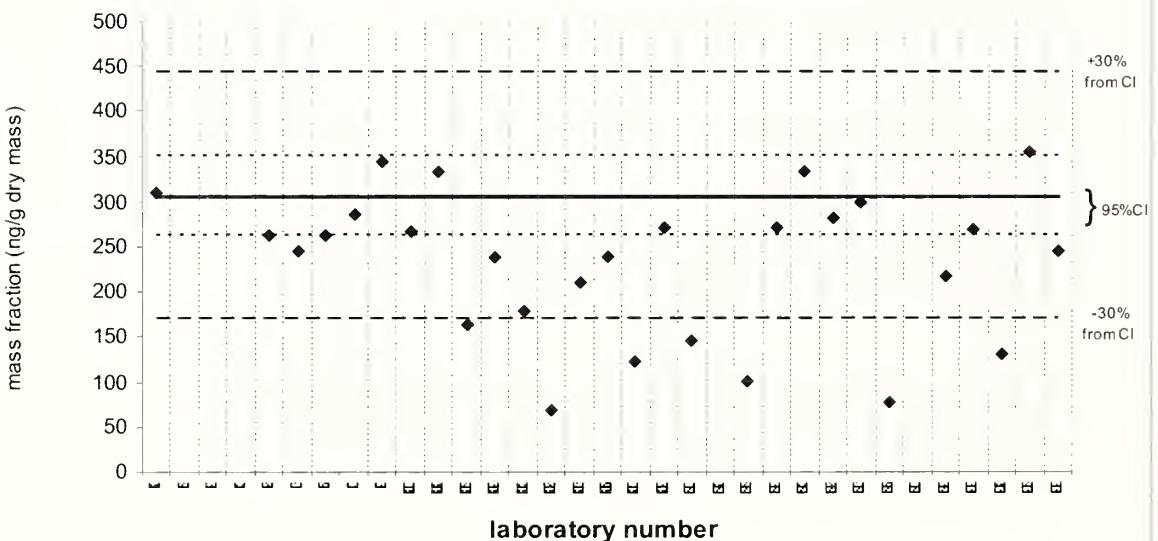
benzo[ghi]perylene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 32

**benzo[ghi]perylene****SRM 1941b**

Certified Value = 307 ng/g (dry mass) ; 95% CI 45 ng/g (dry mass)

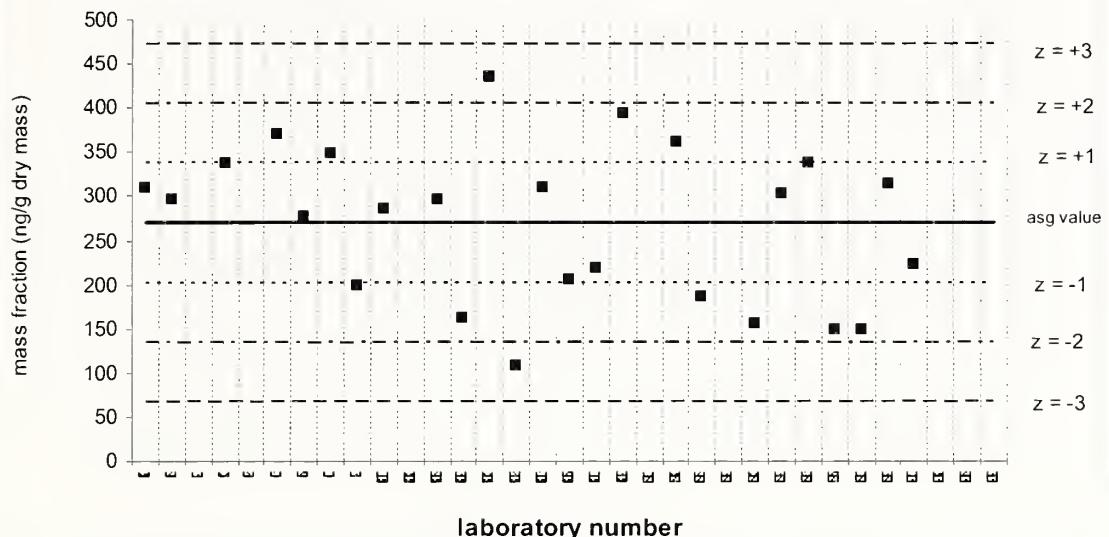
Reported Results: 28 Quantitative Results: 28



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenz[a,h]anthracene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 31 Quantitative Results: 26 Lab 5 reported 1137 ng/g (dry mass)

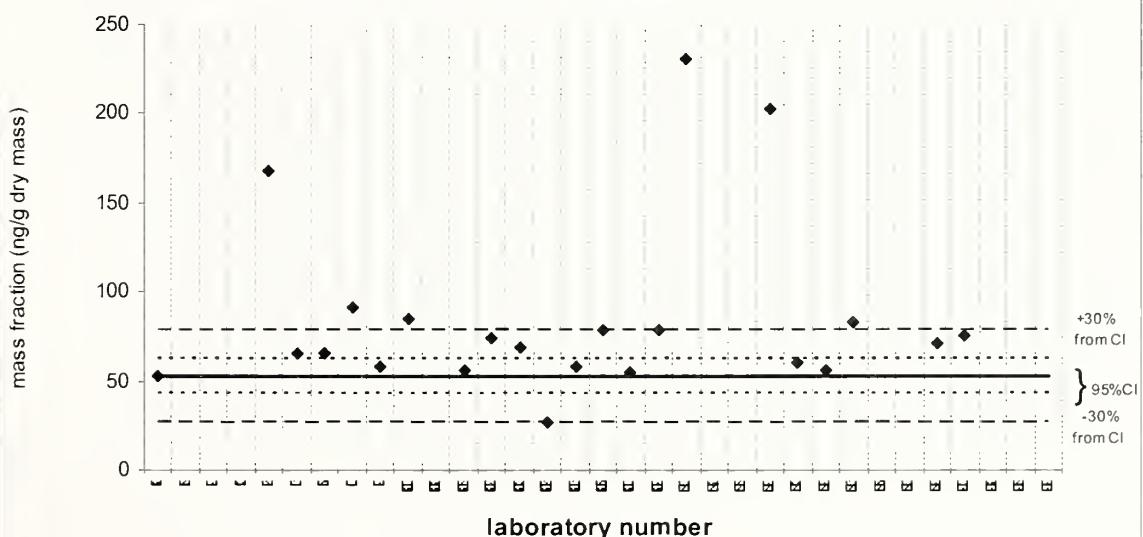


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

dibenz[a,h]anthracene**SRM 1941b**

Certified Value = 53 ng/g (dry mass) ; 95% CI 10 ng/g (dry mass)

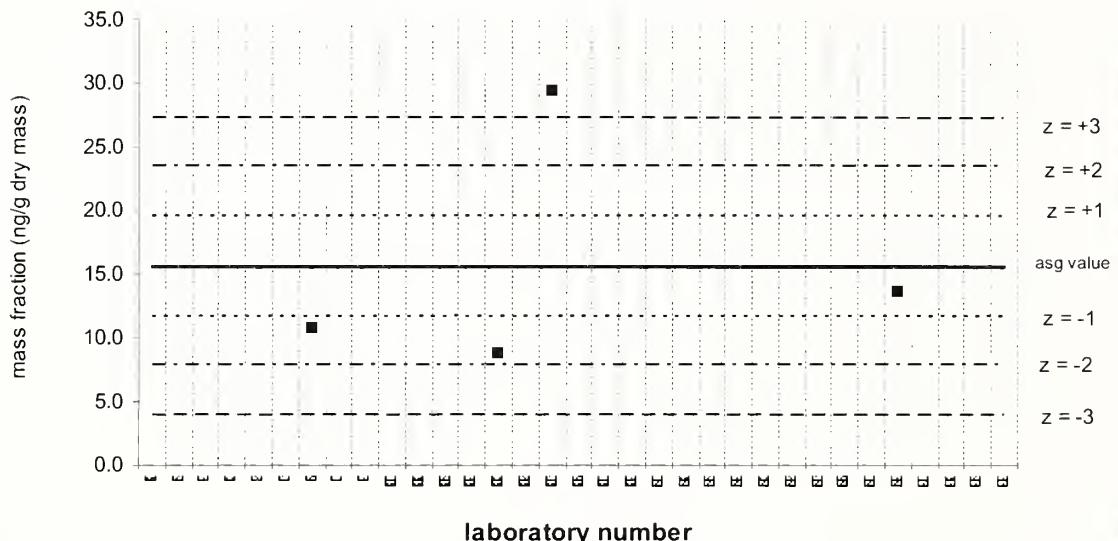
Reported Results: 25 Quantitative Results: 22



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

cis/trans-decalin**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 4

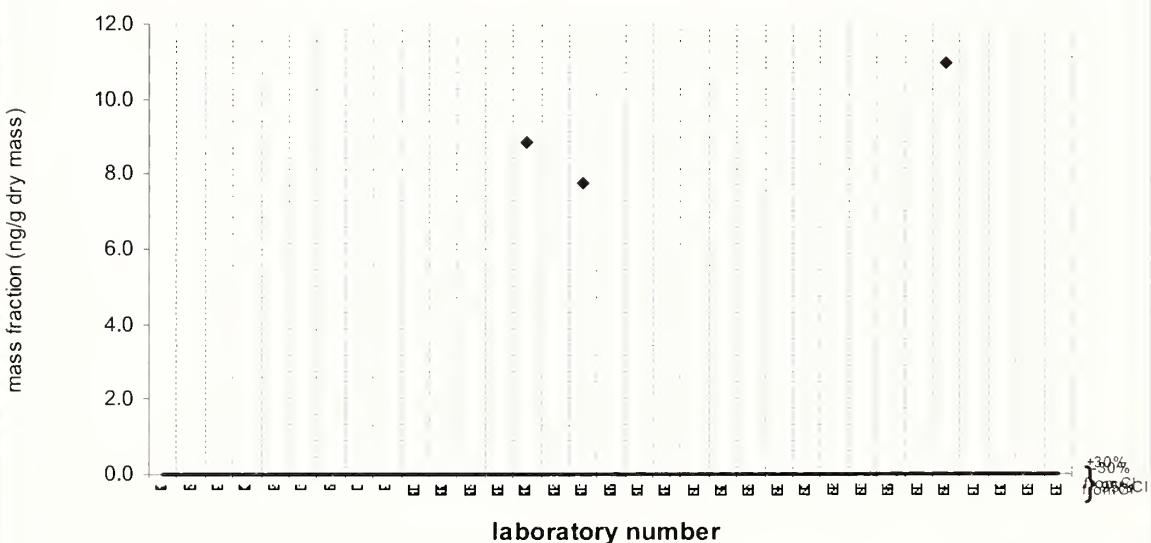


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

cis/trans-decalin**SRM 1941b**

Target Value = no target ng/g (dry mass)

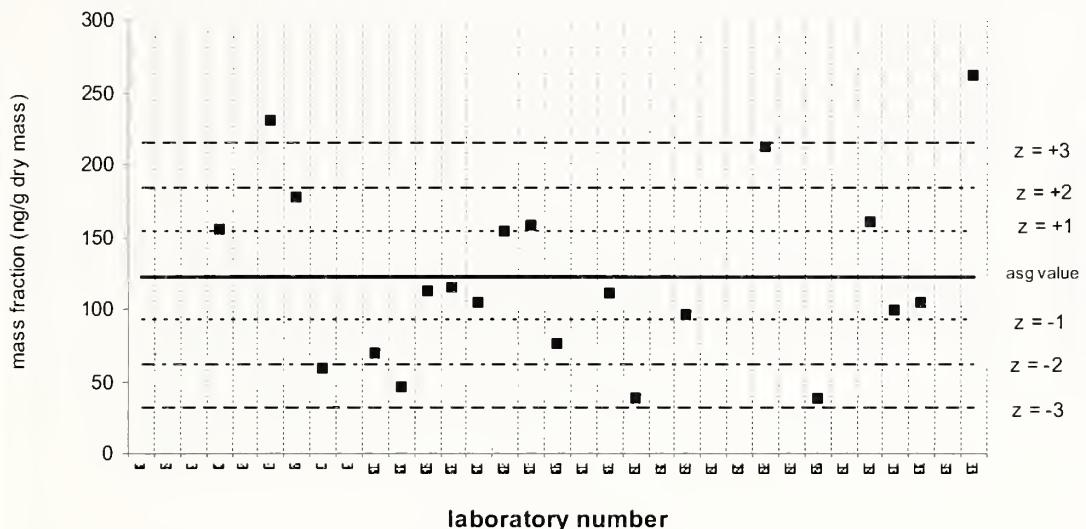
Reported Results: 10 Quantitative Results: 4 Lab 27 reported 225 ng/g (dry mass)



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenzofuran**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 21

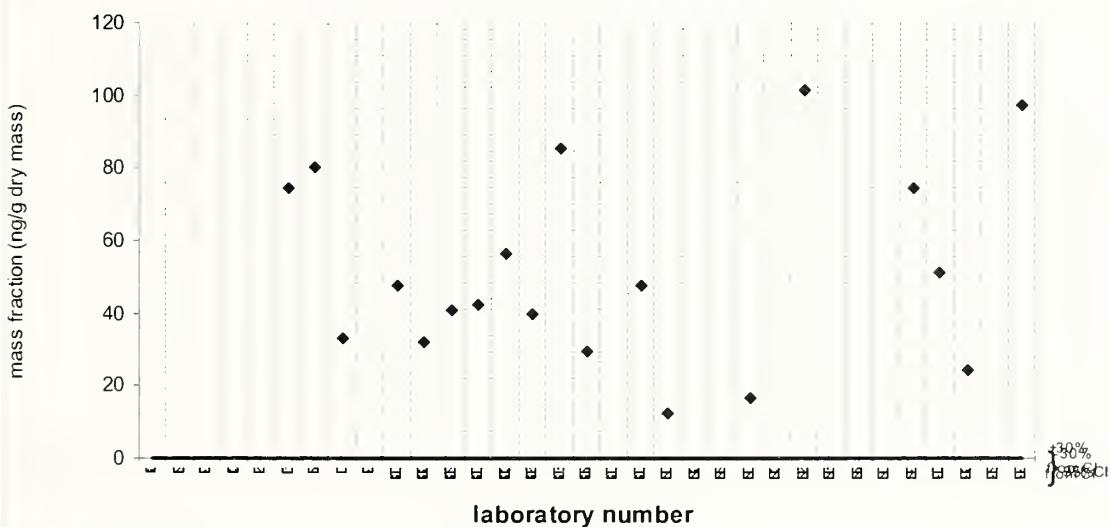


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

dibenzofuran**SRM 1941b**

Target Value = no target ng/g (dry mass)

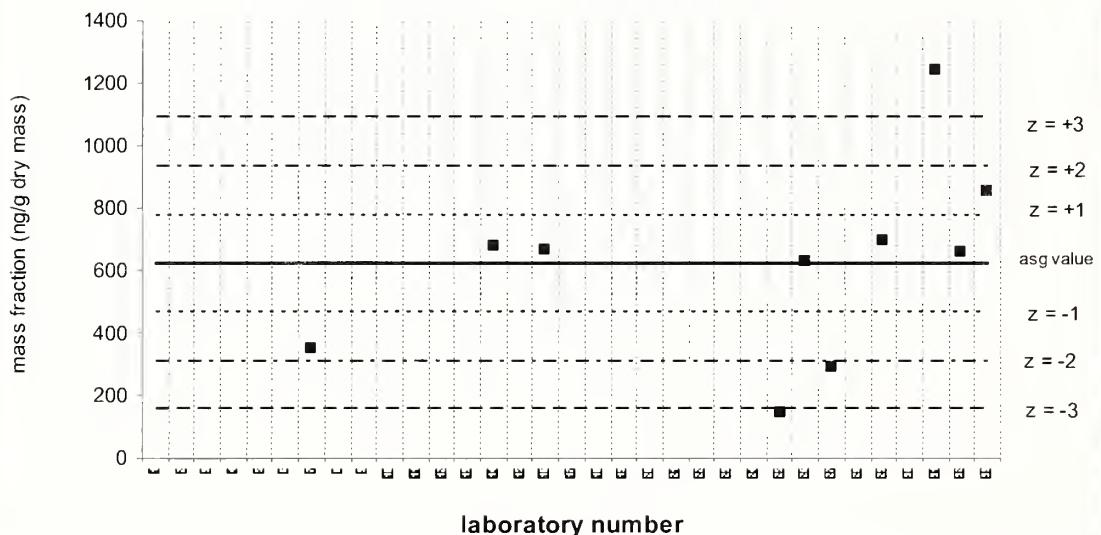
Reported Results: 20 Quantitative Results: 19



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

retene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 12 Quantitative Results: 10

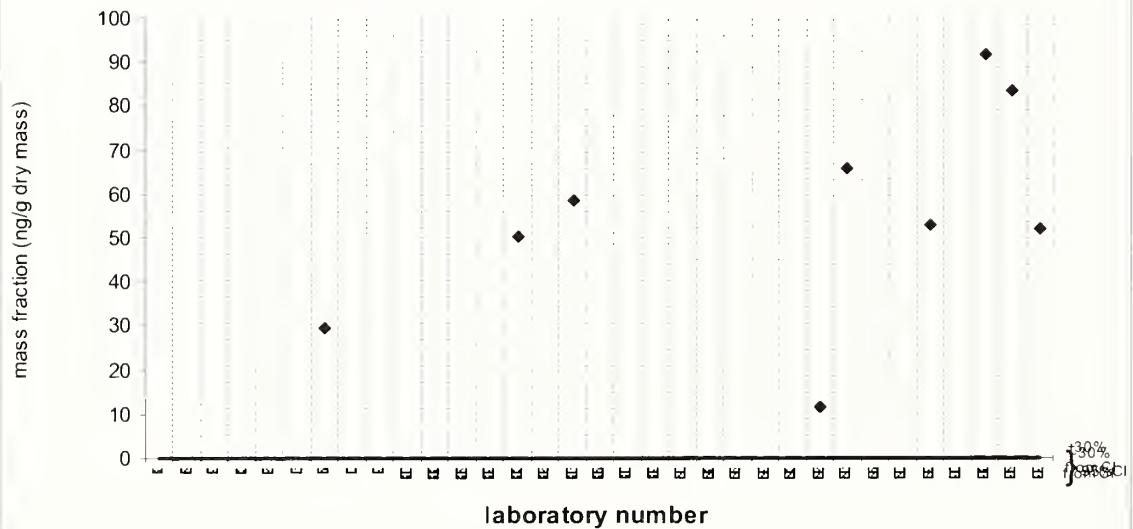


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

retene**SRM 1941b**

Target Value = no target ng/g (dry mass)

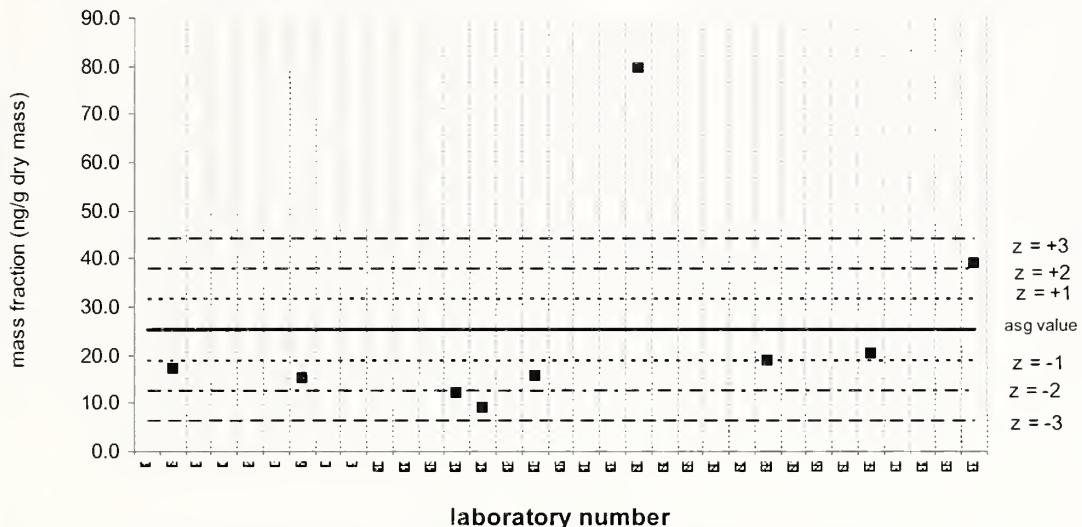
Reported Results: 12 Quantitative Results: 9



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzothiophene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 12 Quantitative Results: 10 Lab 23 reported 1400 ng/g (dry mass)

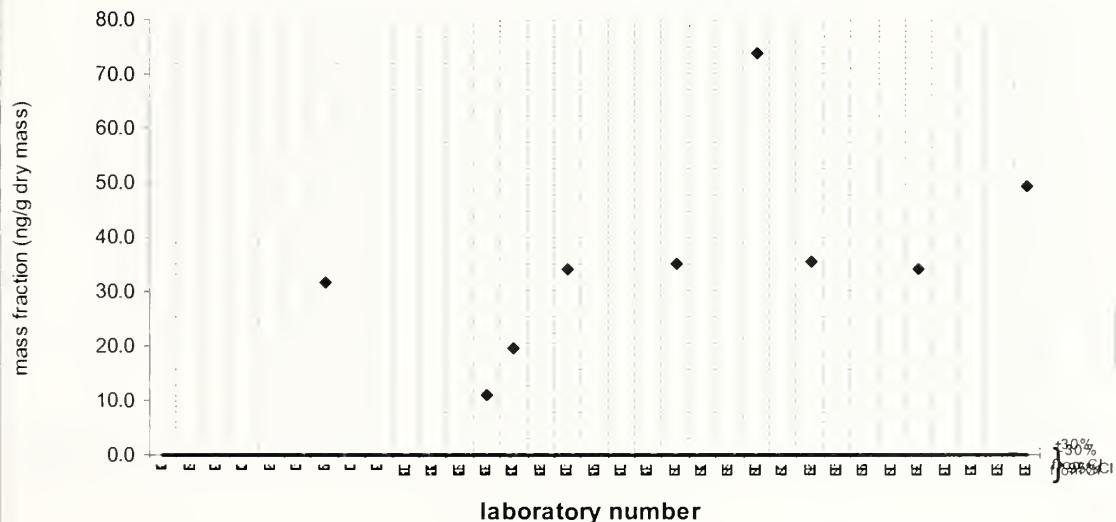


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

benzothiophene**SRM 1941b**

Target Value = no target ng/g (dry mass)

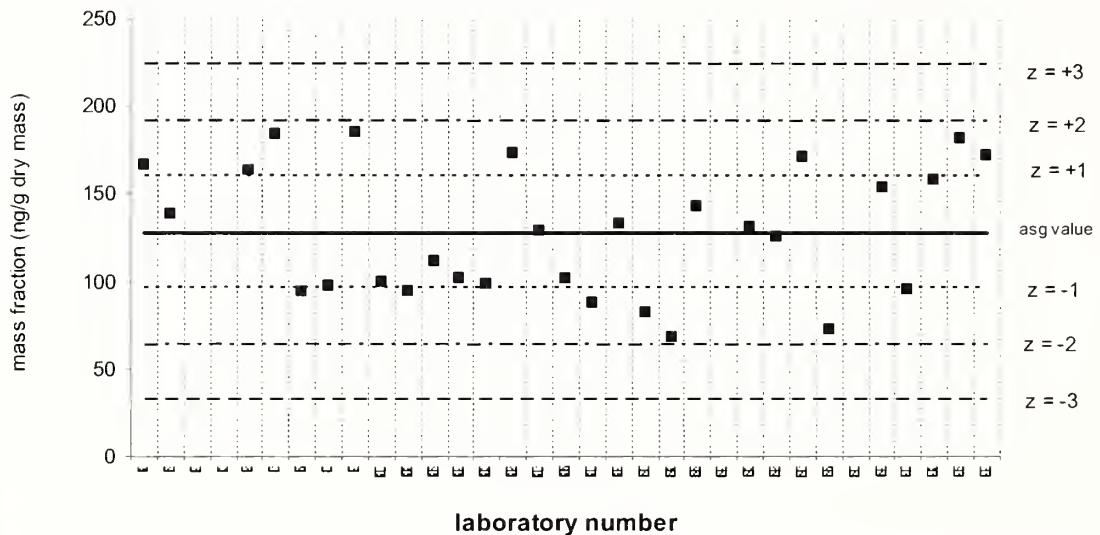
Reported Results: 11 Quantitative Results: 9



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

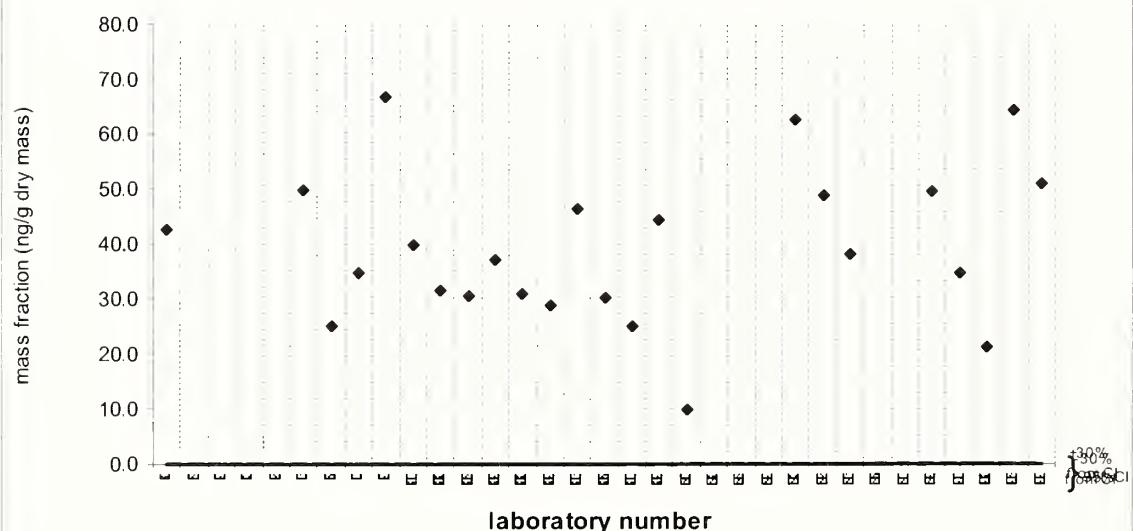
dibenzothiophene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 30 Lab 23 reported 1247 ng/g (dry mass)

**dibenzothiophene****SRM 1941b**

Target Value = no target ng/g (dry mass)

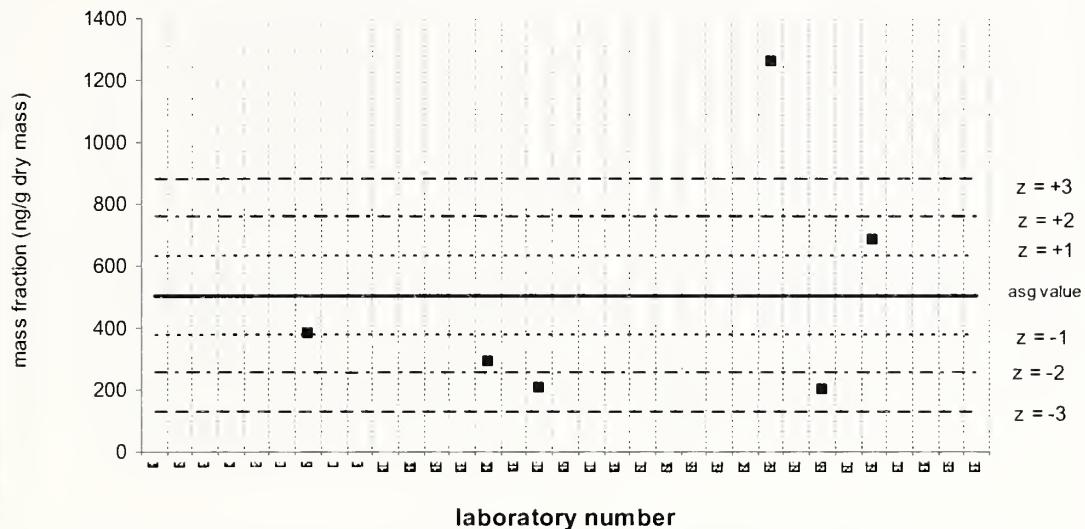
Reported Results: 27 Quantitative Results: 24



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

naphthobenzothiophene**QA10SED01**Assigned value = 2287 ng/g (dry mass) $s = 430$ ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 9 Quantitative Results: 6

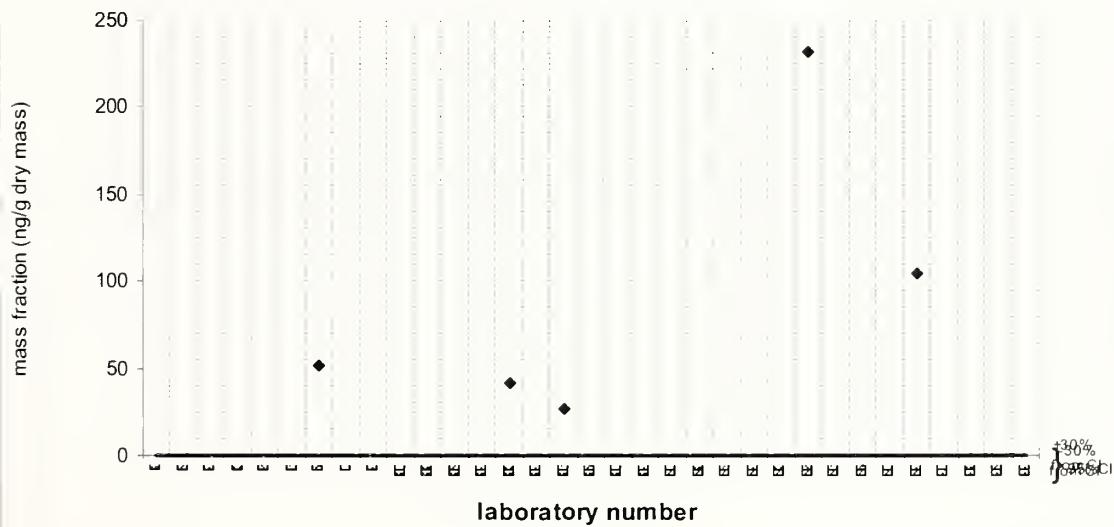


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

naphthobenzothiophene**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 5



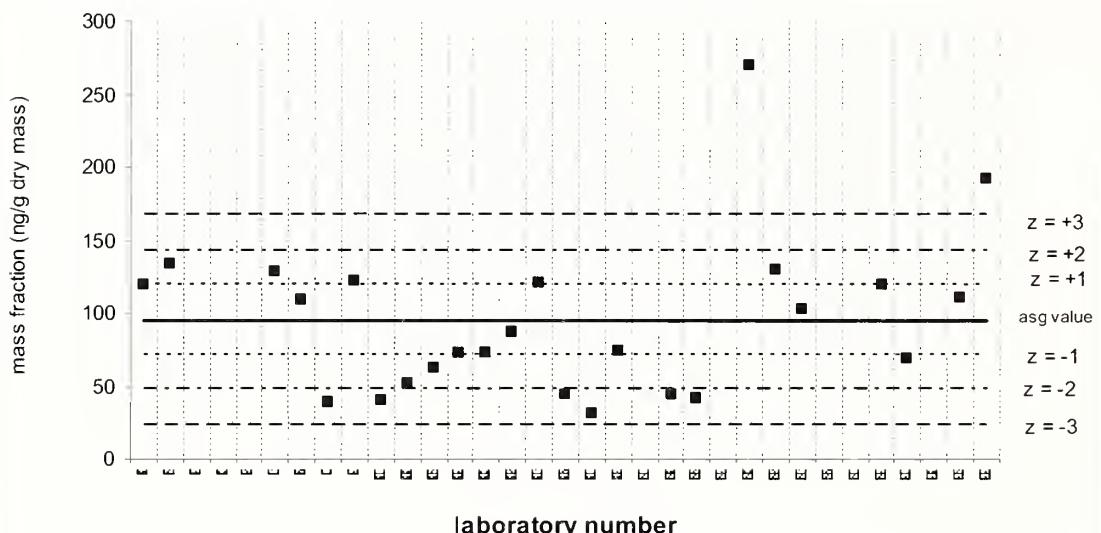
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylnaphthalene

QA10SED01

Assigned value = 95.4 ng/g (dry mass) $s = 54.0$ ng/g (dry mass) 95% CI = 21.2 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 25

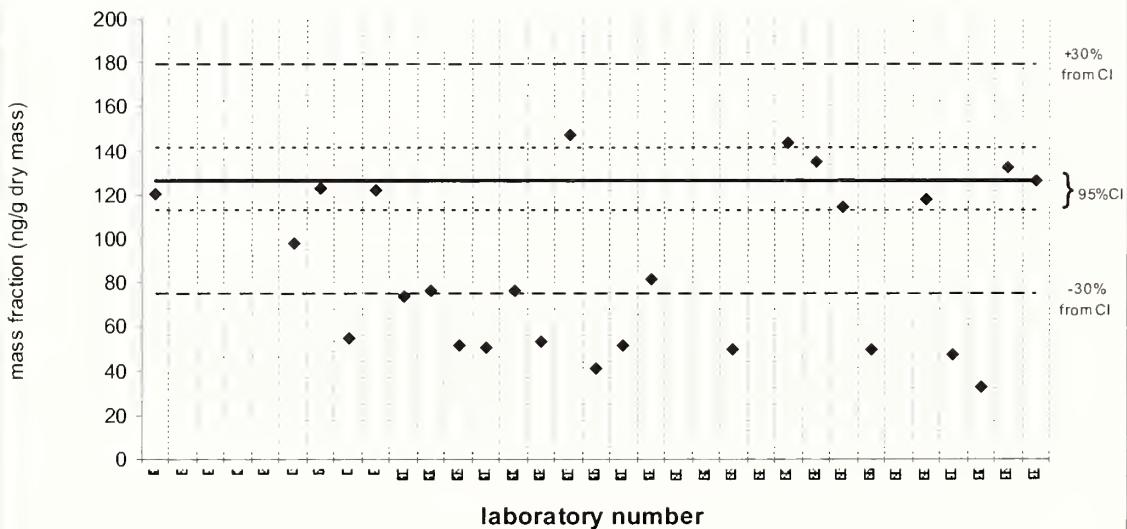


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

1-methylnaphthalene

Reference Value = 127 ng/g (dry mass) ; 95% CI 14 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 25



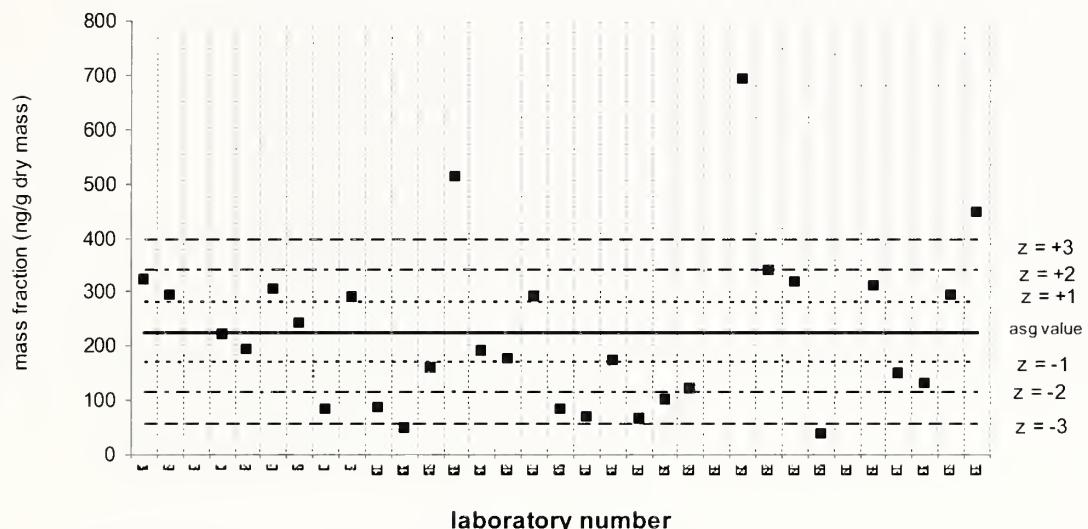
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2-methylnaphthalene

QA10SED01

Assigned value = 225 ng/g (dry mass) $s = 149$ ng/g (dry mass) 95% CI = 53 ng/g (dry mass)

Reported Results: 32 Quantitative Results: 30

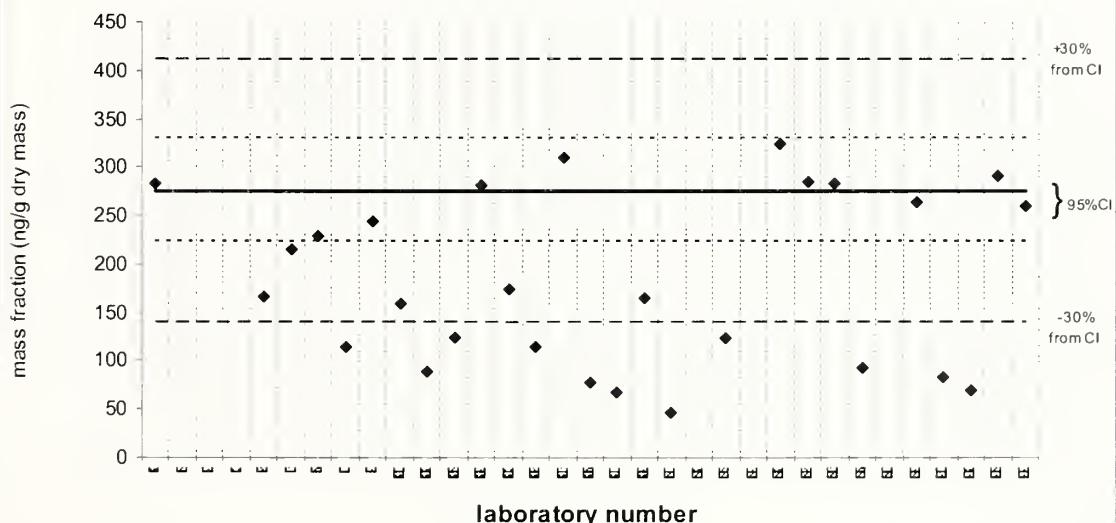


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

2-methylnaphthalene

Reference Value = 276 ng/g (dry mass) ; 95% CI 53 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 27



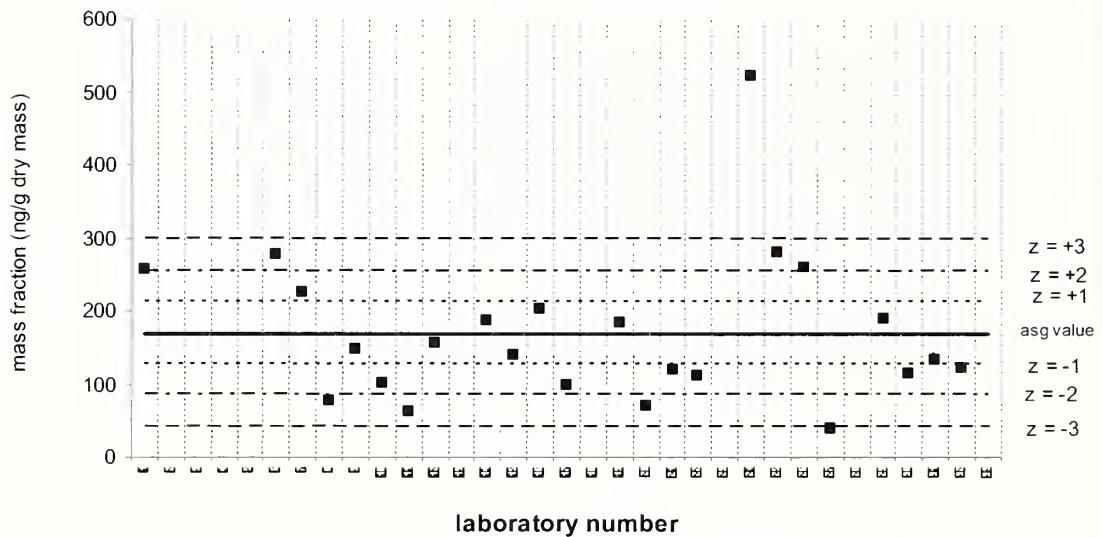
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,6-dimethylnaphthalene

QA10SED01

Assigned value = 170 ng/g (dry mass) $s = 102$ ng/g (dry mass) 95% CI = 41 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 24

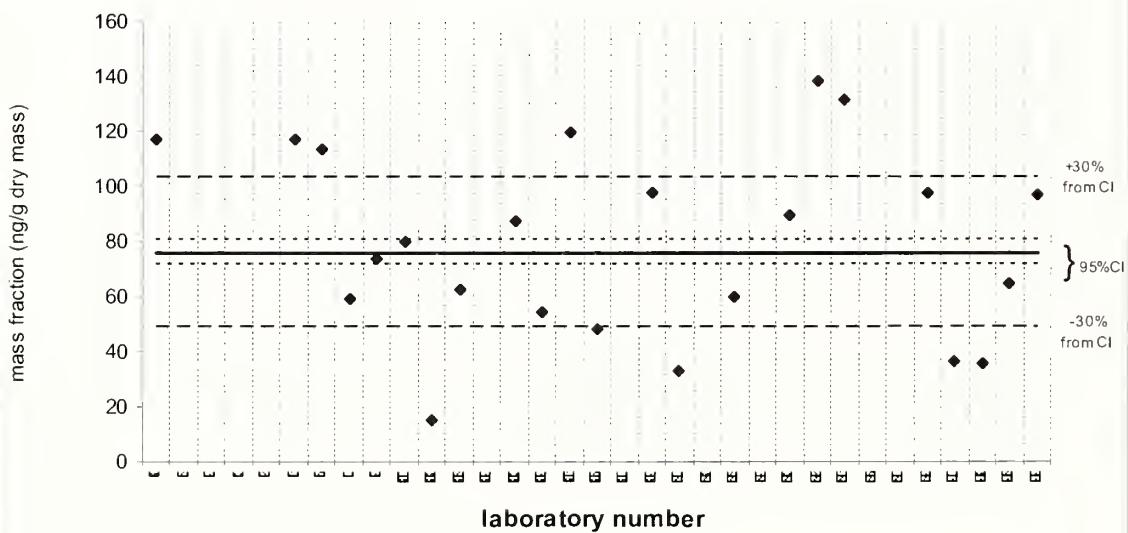


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

2,6-dimethylnaphthalene

Reference Value = 75.9 ng/g (dry mass) ; 95% CI 4.5 ng/g (dry mass)

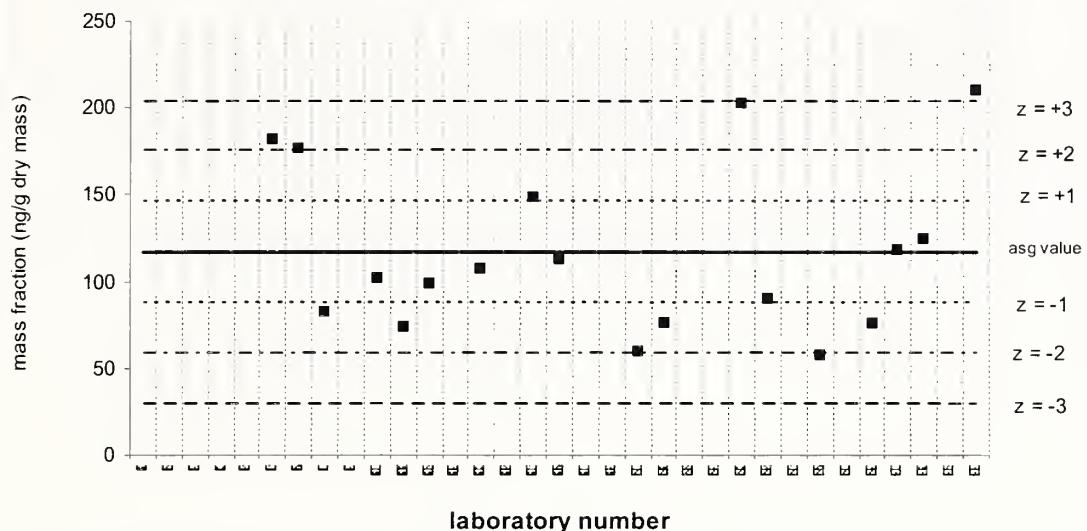
Reported Results: 25 Quantitative Results: 23



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1,6,7-trimethylnaphthalene**QA10SED01**Assigned value = 117 ng/g (dry mass) $s = 48$ ng/g (dry mass) 95% CI = 22 ng/g (dry mass)

Reported Results: 18 Quantitative Results: 18

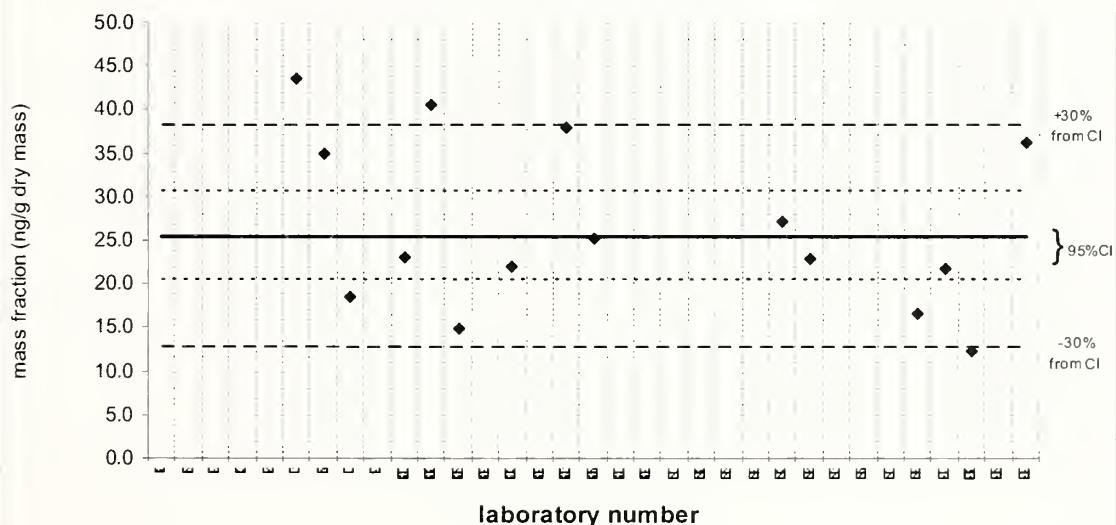


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

1,6,7-trimethylnaphthalene**SRM 1941b**

Reference Value = 25.5 ng/g (dry mass) ; 95% CI 5.1 ng/g (dry mass)

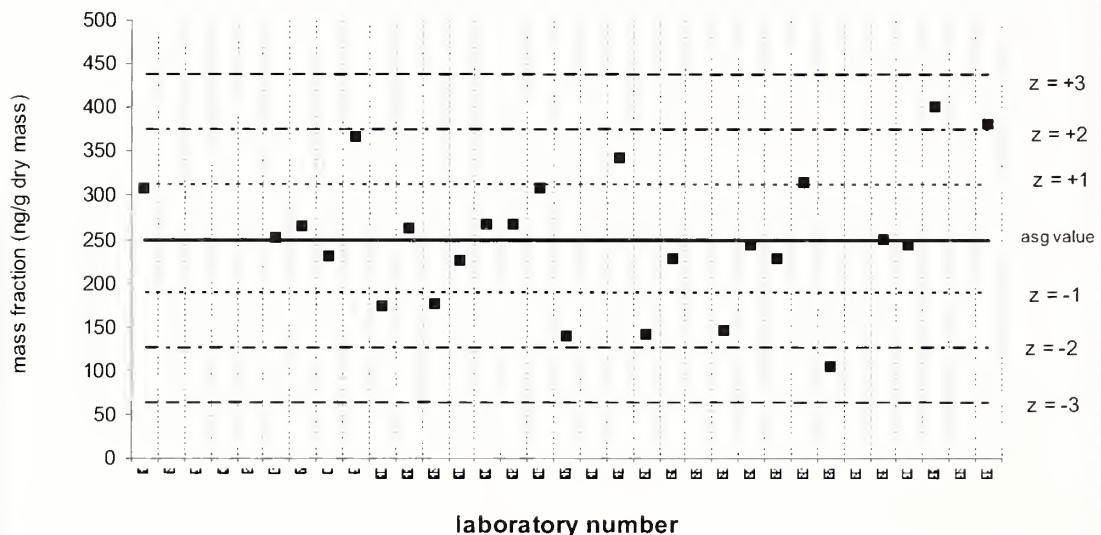
Reported Results: 16 Quantitative Results: 15



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylphenanthrene**QA10SED01**Assigned value = 250 ng/g (dry mass) $s = 77$ ng/g (dry mass) 95% CI = 30 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 25

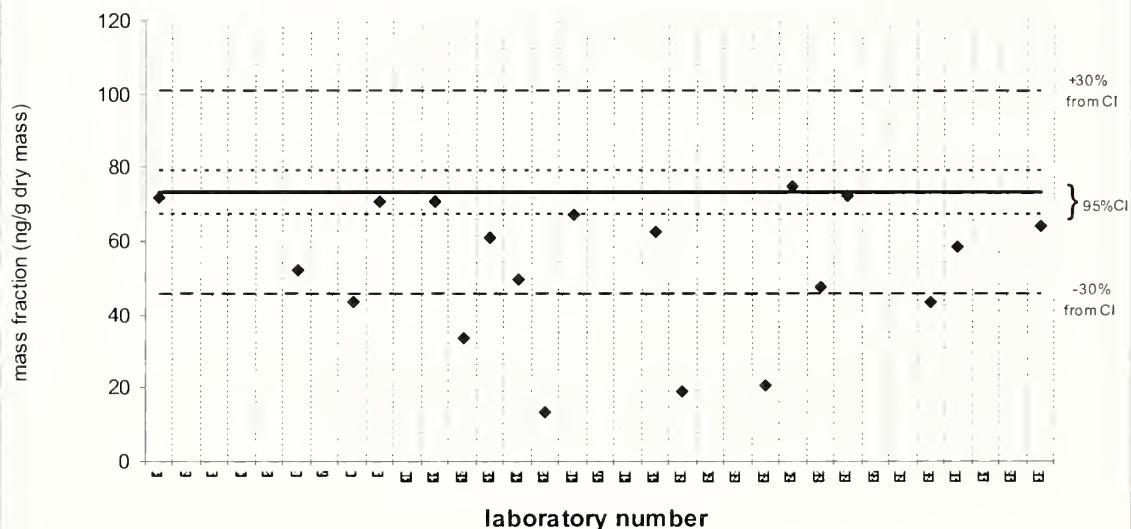


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

1-methylphenanthrene**SRM 1941b**

Reference Value = 25.5 ng/g (dry mass) ; 95% CI 5.1 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 19

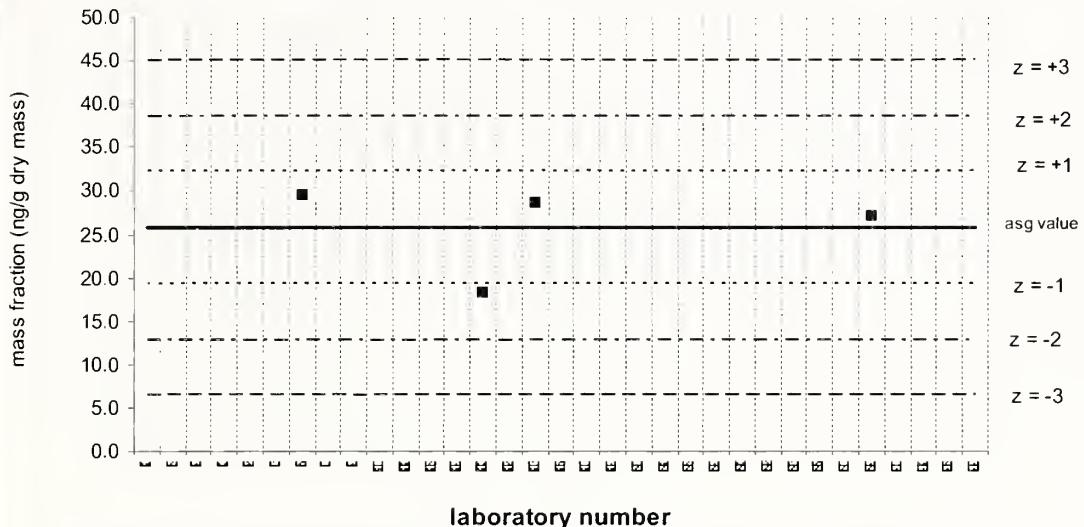


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-decalins**QA10SED01**

Assigned value = 25.7 ng/g (dry mass) $s = 5.2$ ng/g (dry mass) 95% CI = 5.1 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 5 Lab 31 reported 17300 ng/g (dry mass)

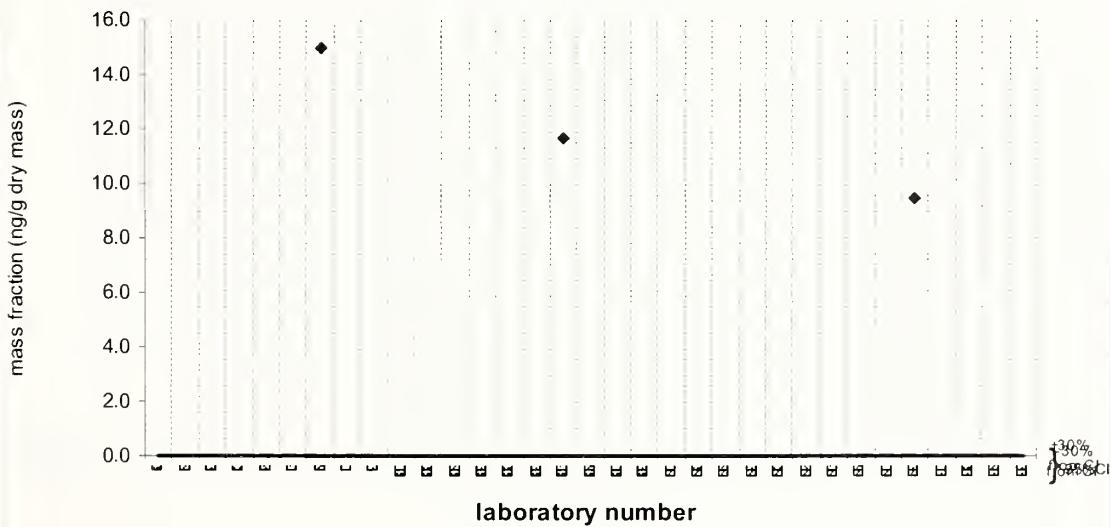


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C1-decalins**SRM 1941b**

Target Value = no target ng/g (dry mass)

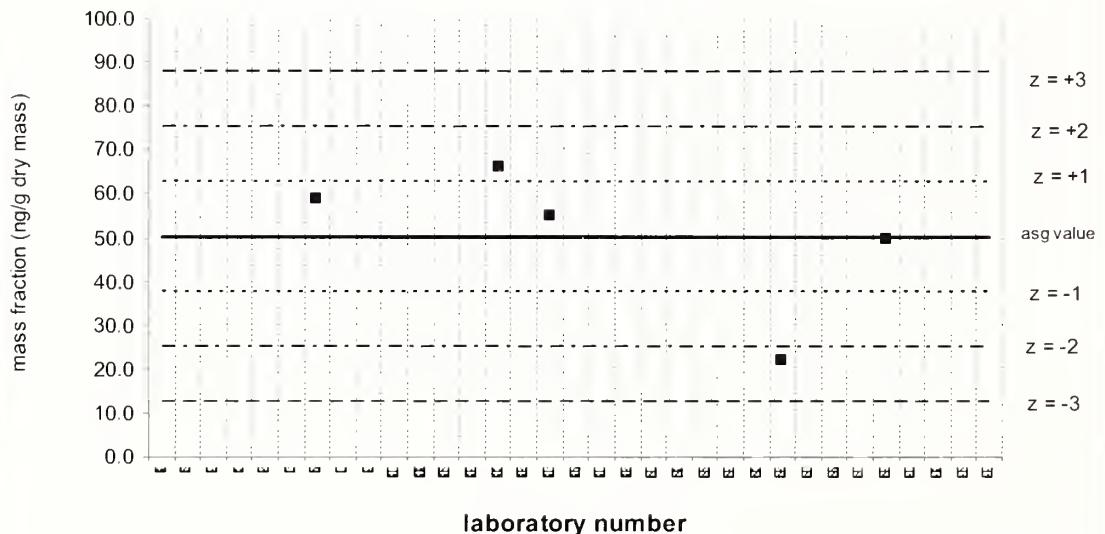
Reported Results: 7 Quantitative Results: 4 Lab 31 reported 1370 ng/g (dry mass)



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-decalins**QA10SED01**Assigned value = 50.3 ng/g (dry mass) $s = 17.0$ ng/g (dry mass) 95% CI = 14.9 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 5

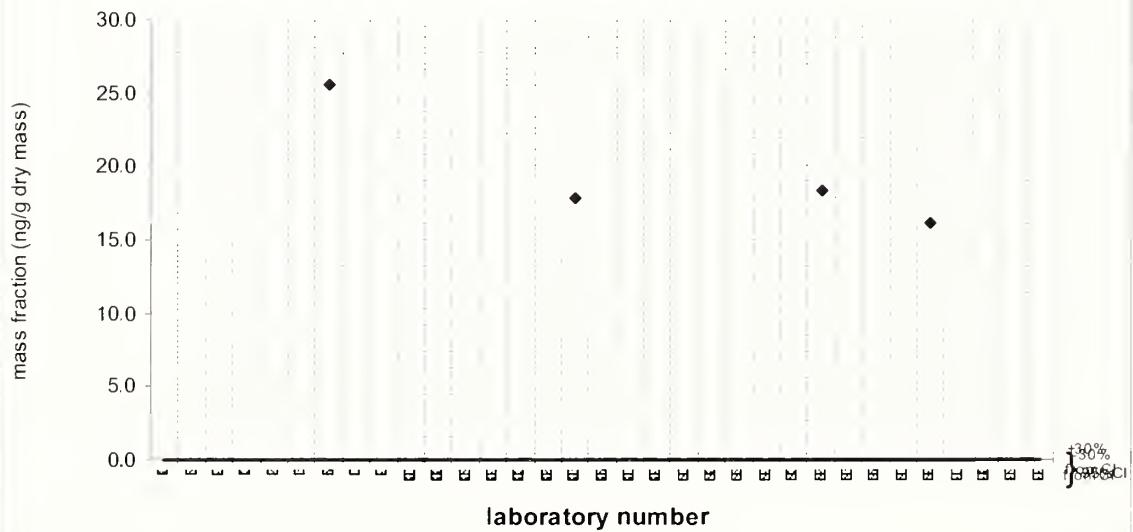


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C2-decalins**SRM 1941b**

Target Value = no target ng/g (dry mass)

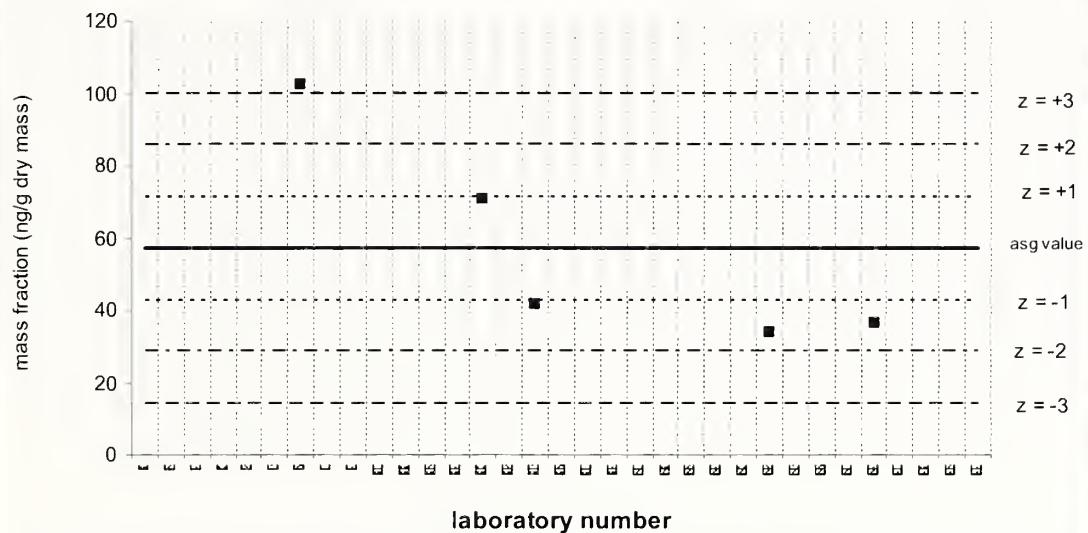
Reported Results: 7 Quantitative Results: 4



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-decalins**QA10SED01**Assigned value = 57.0 ng/g (dry mass) $s = 29.4$ ng/g (dry mass) 95% CI = 25.7 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 5

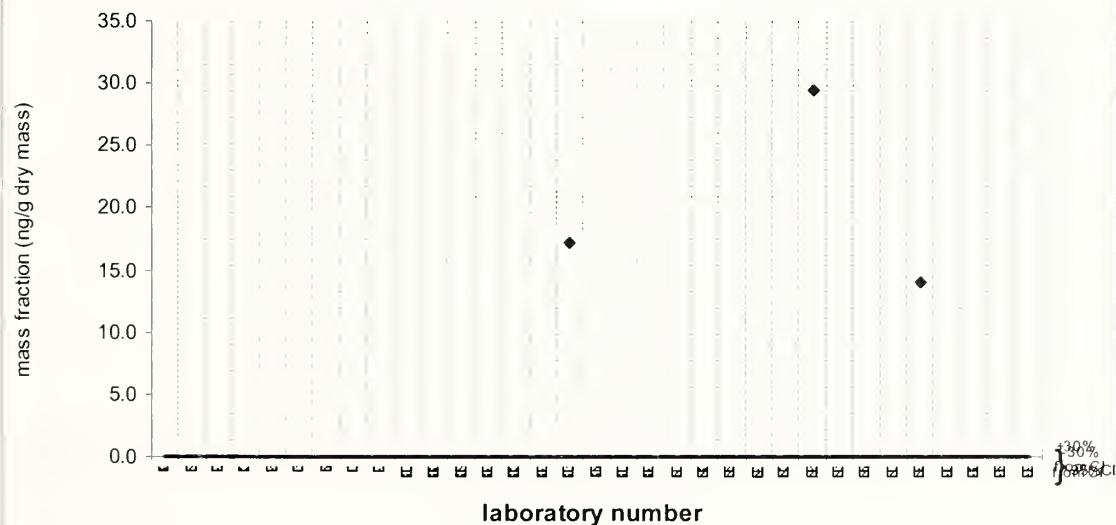


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C3-decalins**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 3



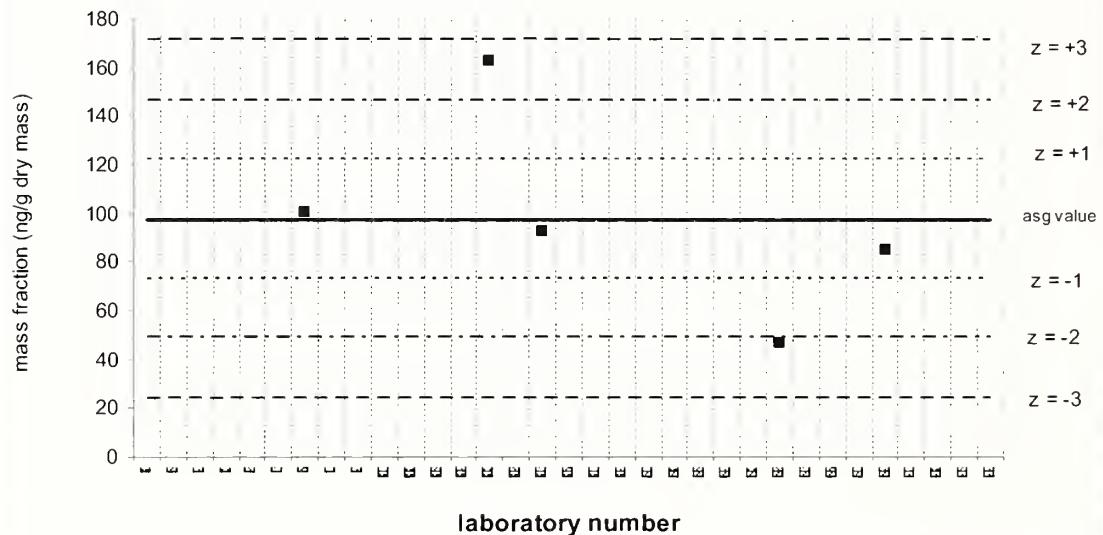
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-decalins

QA10SED01

Assigned value = 97.8 ng/g (dry mass) s = 41.9 ng/g (dry mass) 95% CI = 36.7 ng/g (dry mass)

Reported Results: 7 Quantitative Results: 5



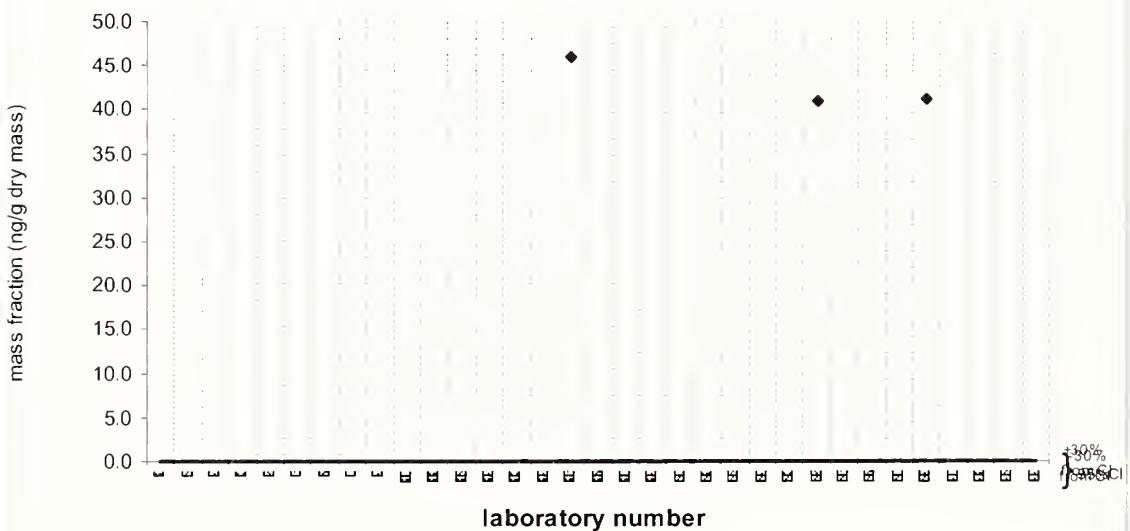
Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C4-decalins

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 3



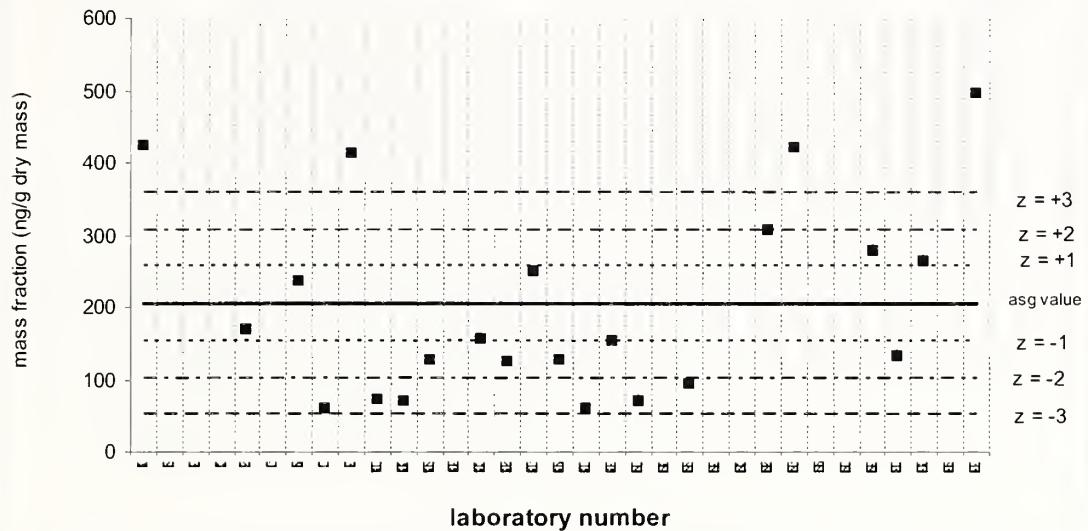
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-naphthalenes

QA10SED01

Assigned value = 205 ng/g (dry mass) $s = 135$ ng/g (dry mass) 95% CI = 56 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 22



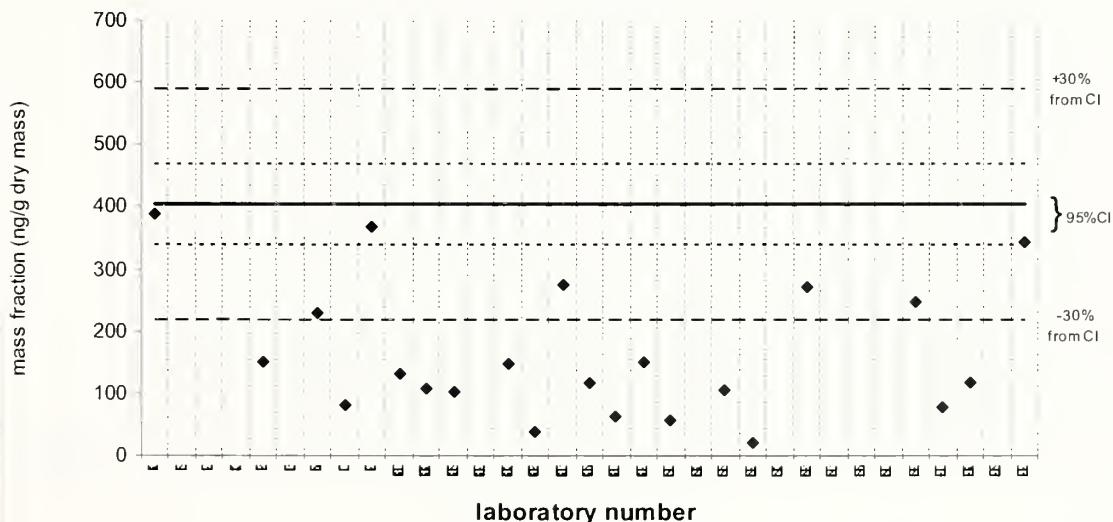
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-naphthalenes

SRM 1941b

Target Value = 403 ng/g (dry mass) ; 95% CI 64 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 22



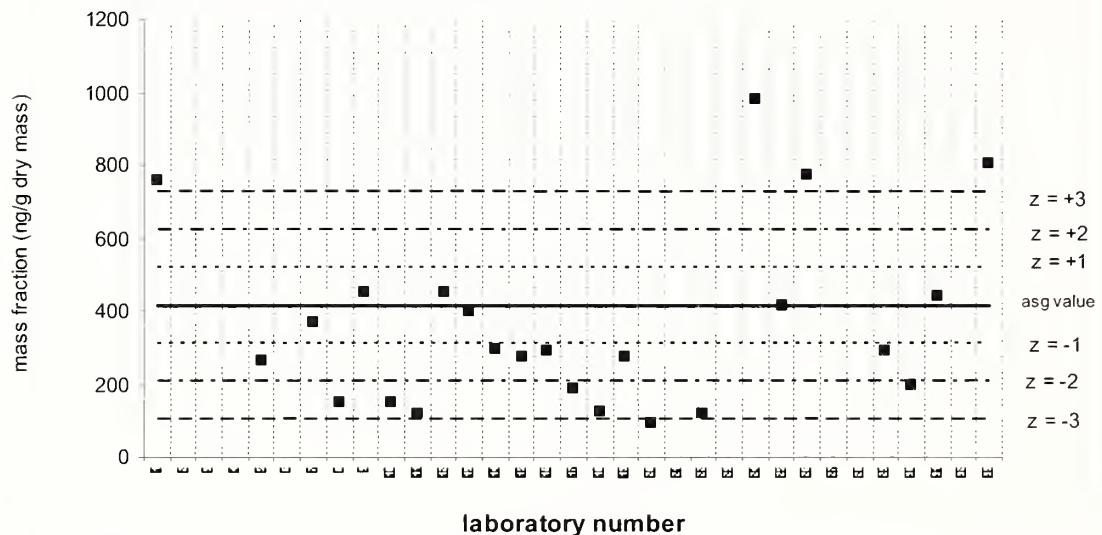
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-naphthalenes

QA10SED01

Assigned value = 415 ng/g (dry mass) $s = 356$ ng/g (dry mass) 95% CI = 140 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 25 Lab 23 reported 1683 ng/g (dry mass)



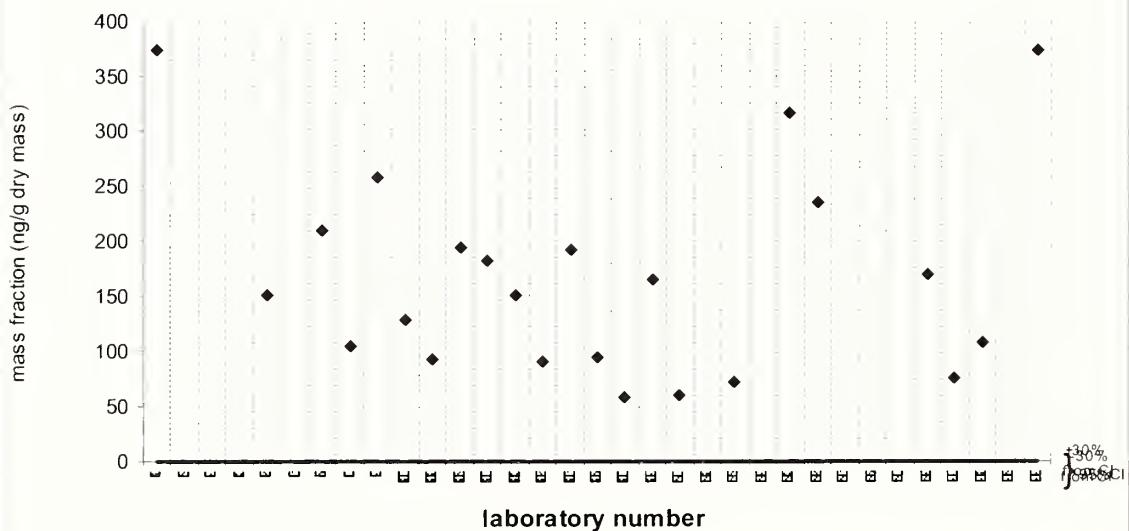
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C2-naphthalenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 24 Quantitative Results: 23



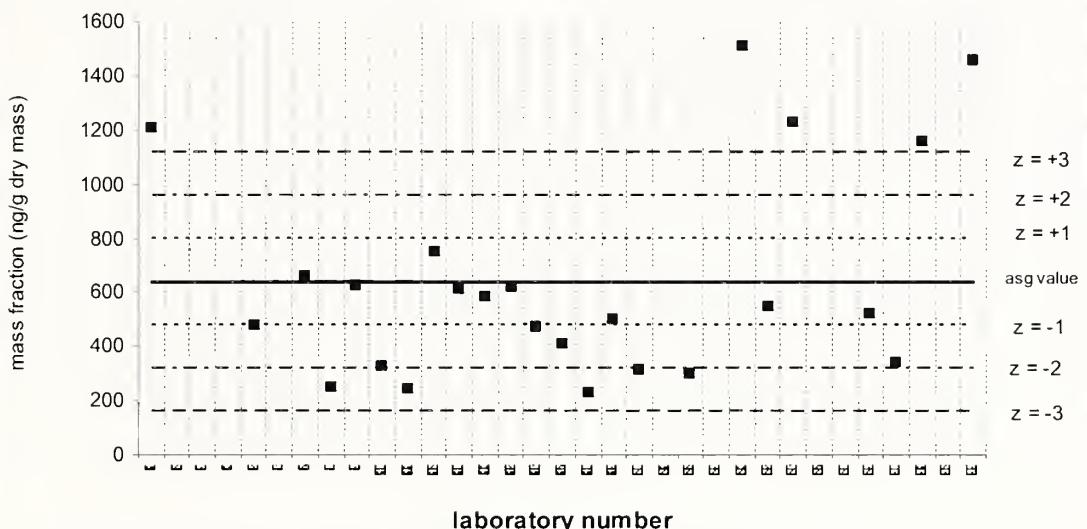
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-naphthalenes

QA10SED01

Assigned value = 638 ng/g (dry mass) $s = 385$ ng/g (dry mass) 95% CI = 154 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 24



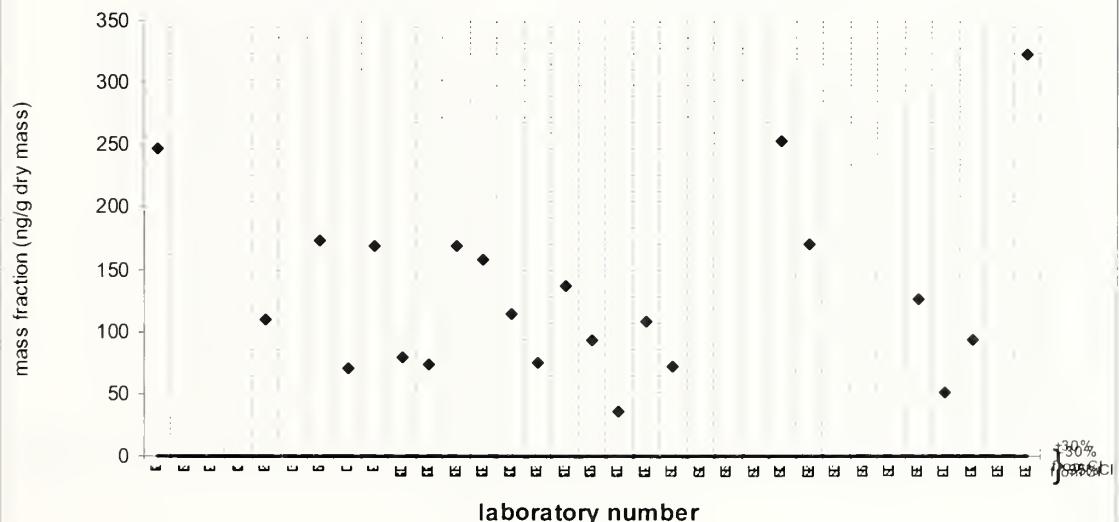
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C3-naphthalenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 23 Quantitative Results: 22



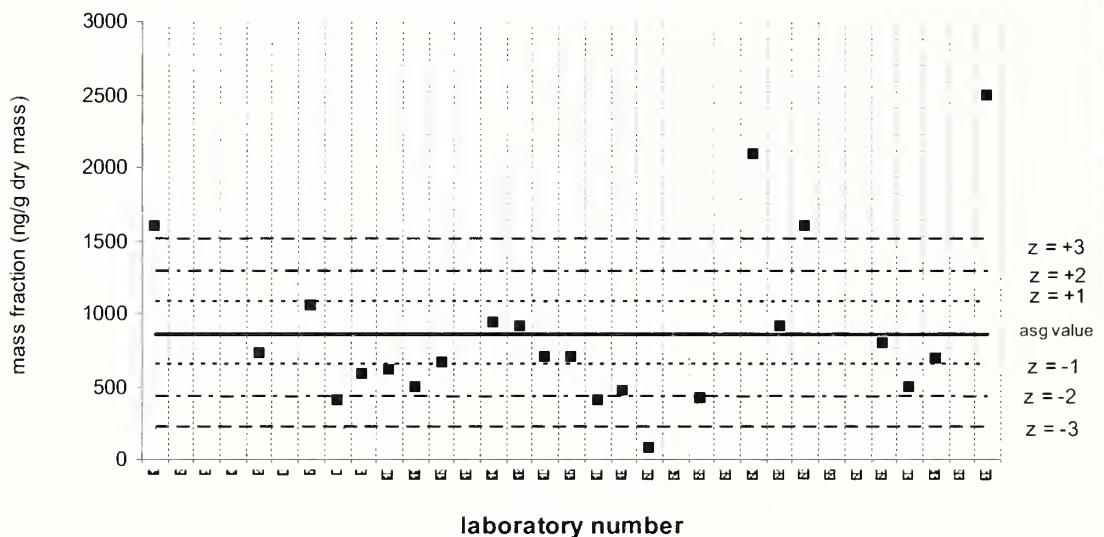
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-naphthalenes

QA10SED01

Assigned value = 860 ng/g (dry mass) $s = 575$ ng/g (dry mass) 95% CI = 235 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23



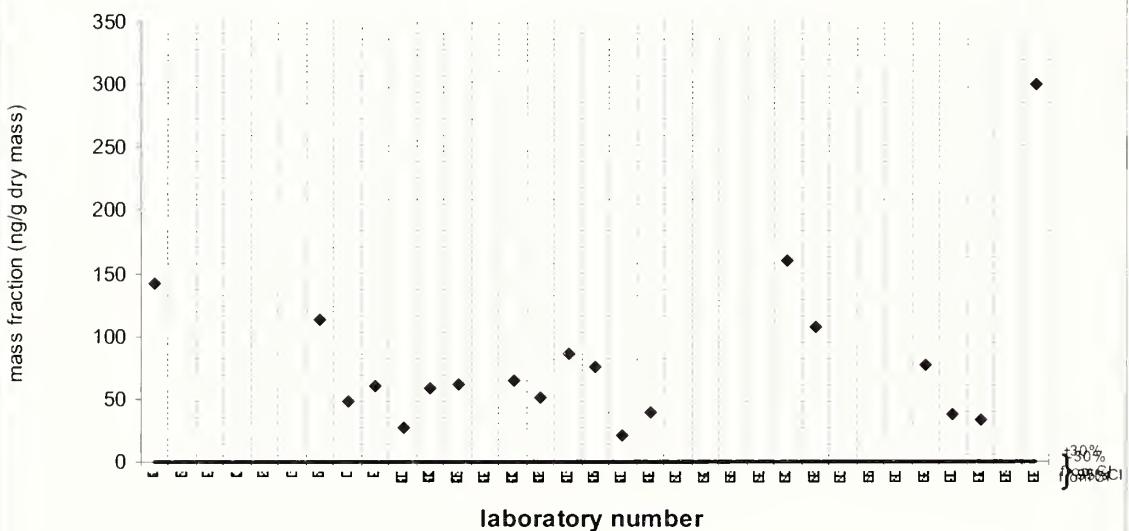
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C4-naphthalenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 19



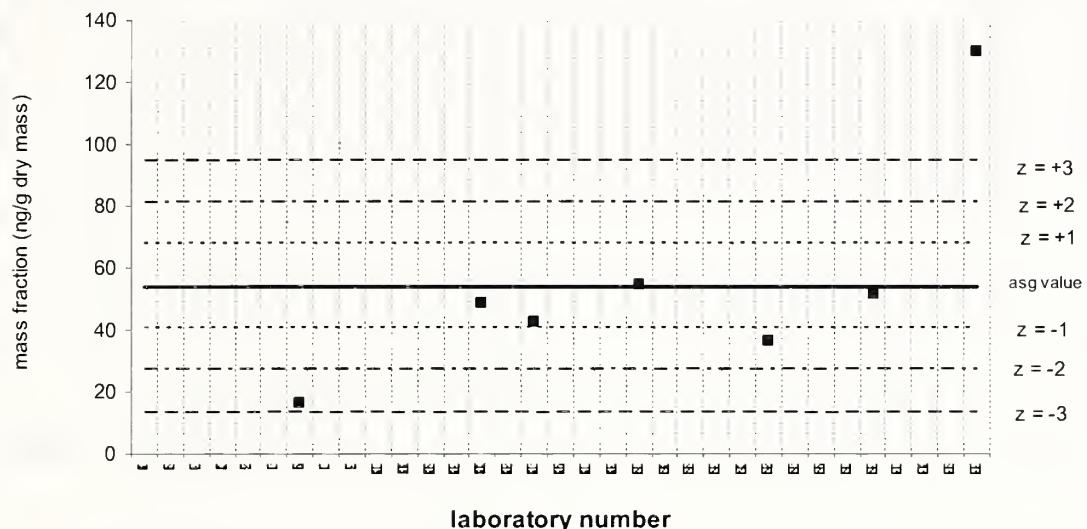
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-benzothiophenes

QA10SED01

Assigned value = 54.2 ng/g (dry mass) $s = 35.8$ ng/g (dry mass) 95% CI = 26.5 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 7



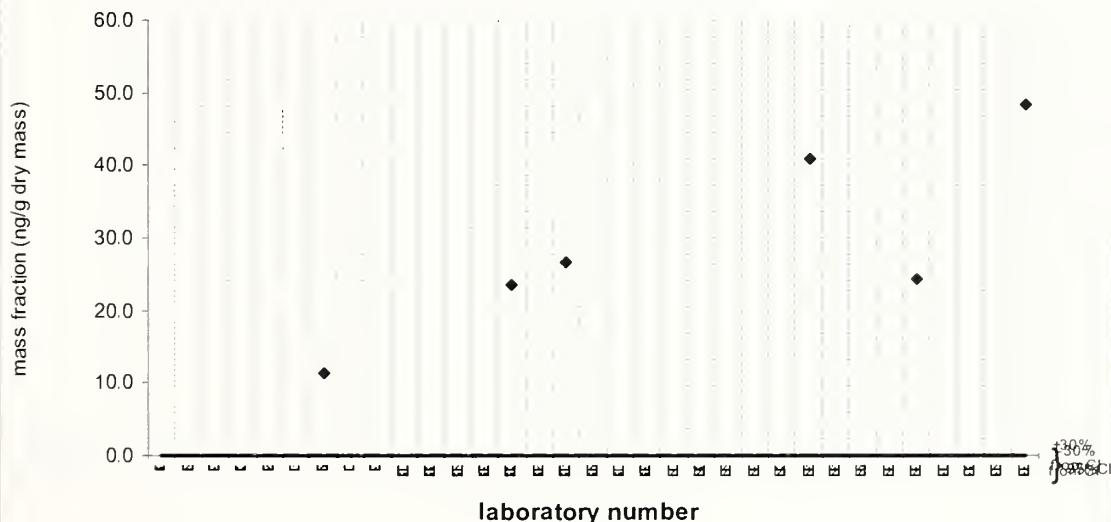
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-benzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 6



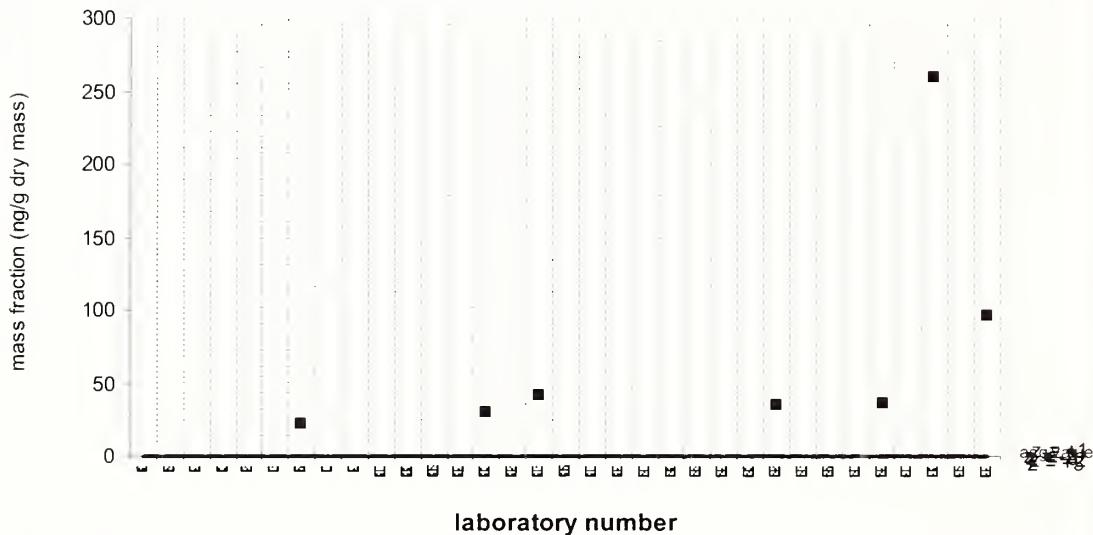
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-benzothiophenes

QA10SED01

Assigned value = no target ng/g (dry mass)

Reported Results: 10 Quantitative Results: 8 Lab 23 reported 1600 ng/g (dry mass)

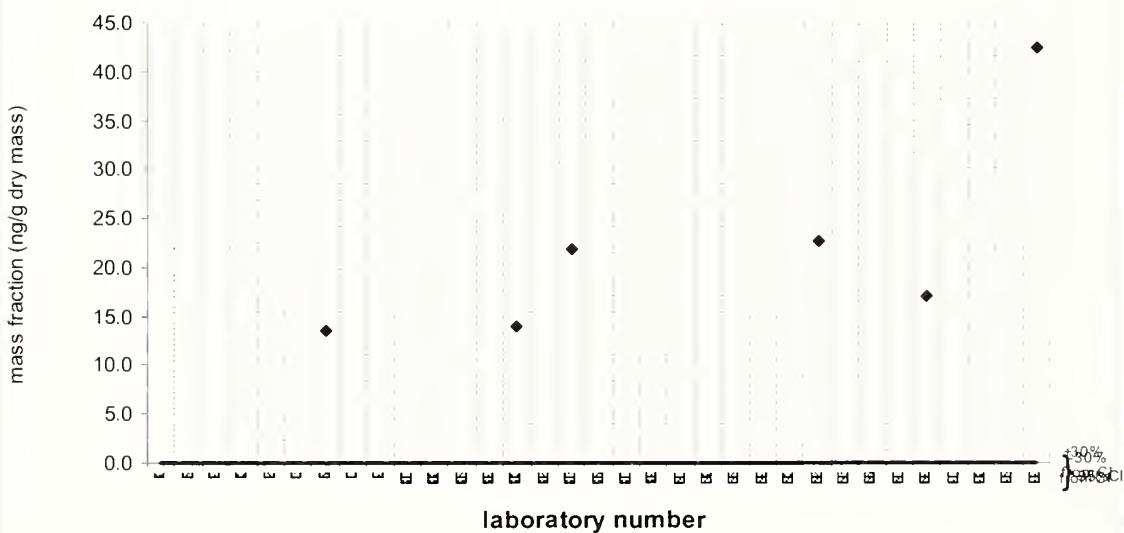


C2-benzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 6



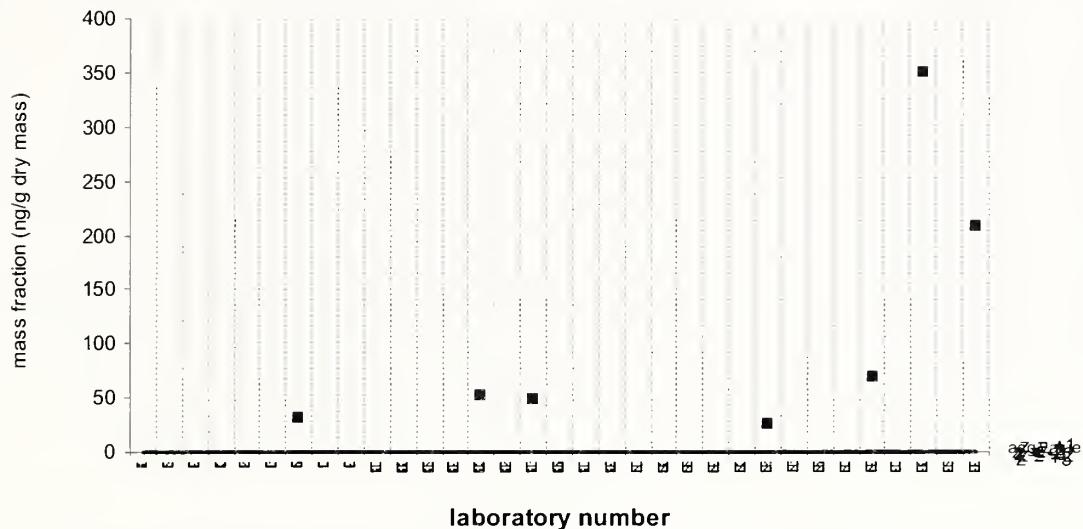
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-benzothiophenes

QA10SED01

Assigned value = no target ng/g (dry mass)

Reported Results: 10 Quantitative Results: 7



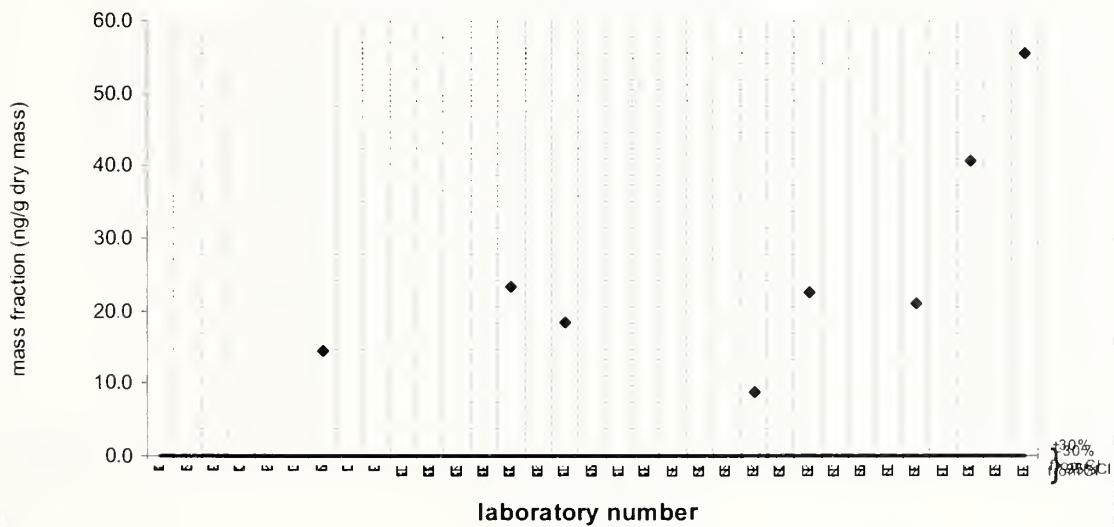
Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C3-benzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 8



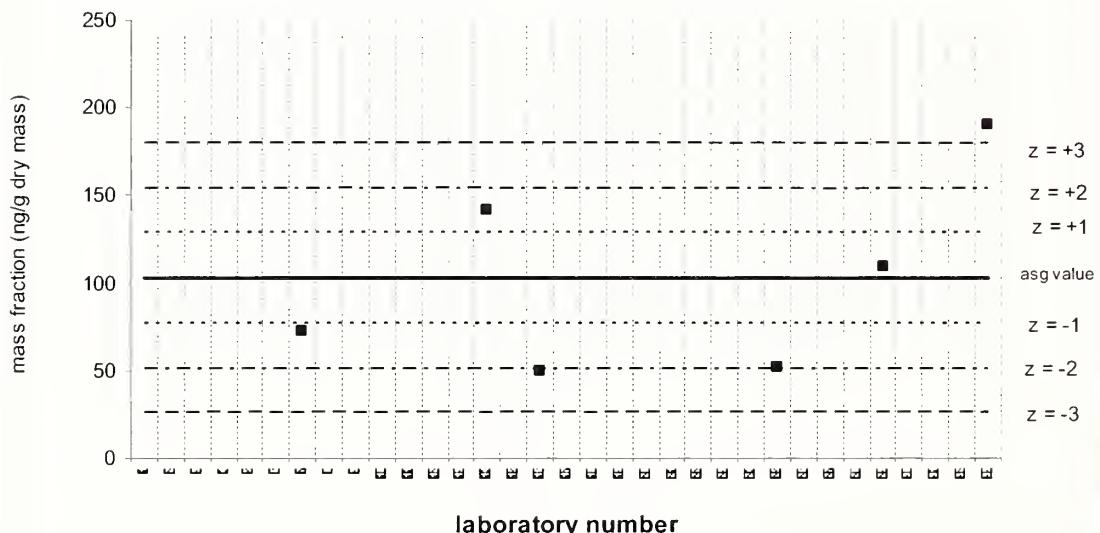
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-benzothiophenes

QA10SED01

Assigned value = 103 ng/g (dry mass) $s = 56$ ng/g (dry mass) 95% CI = 45 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6



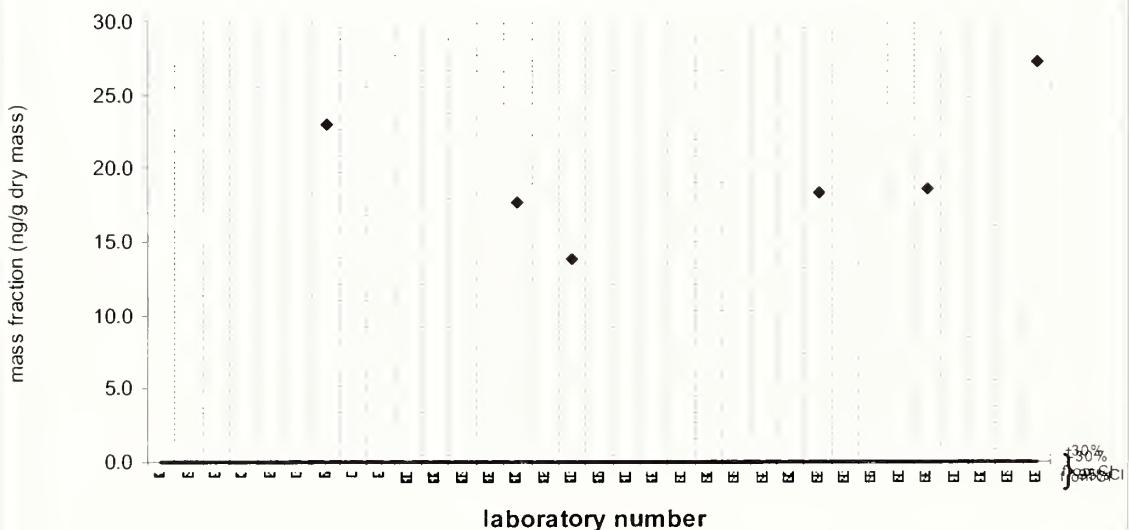
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C4-benzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

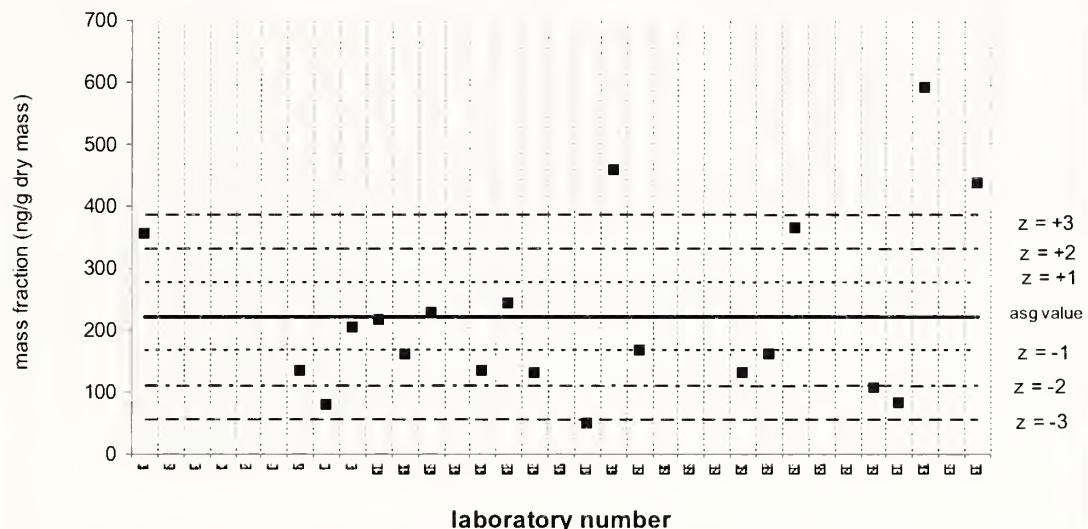
Reported Results: 8 Quantitative Results: 6



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-fluorenes**QA10SED01**Assigned value = 221 ng/g (dry mass) $s = 146$ ng/g (dry mass) 95% CI = 64 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 21 Lab 5 reported 2480 ng/g (dry mass)

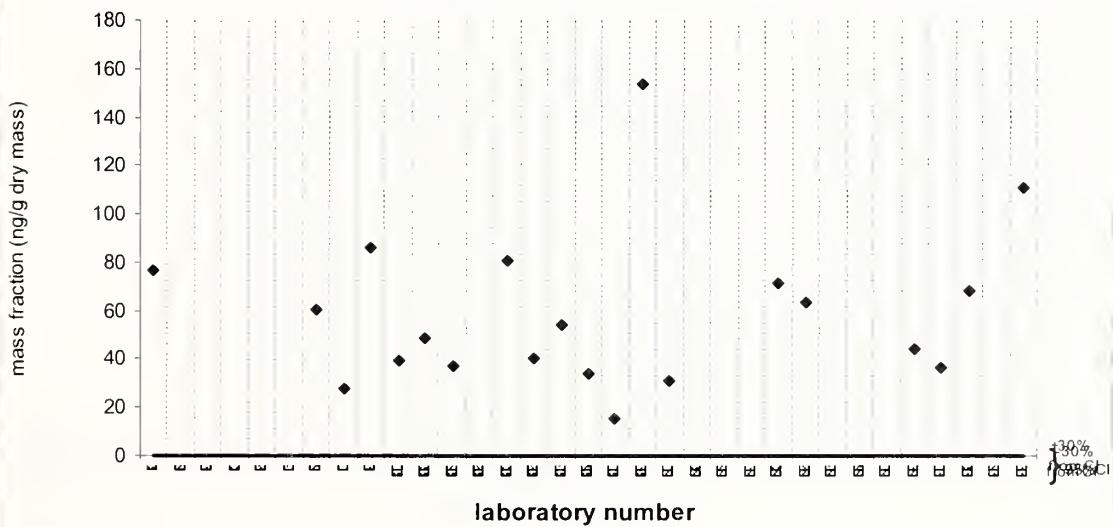


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-fluorenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 21 Lab 5 reported 323 ng/g (dry mass)



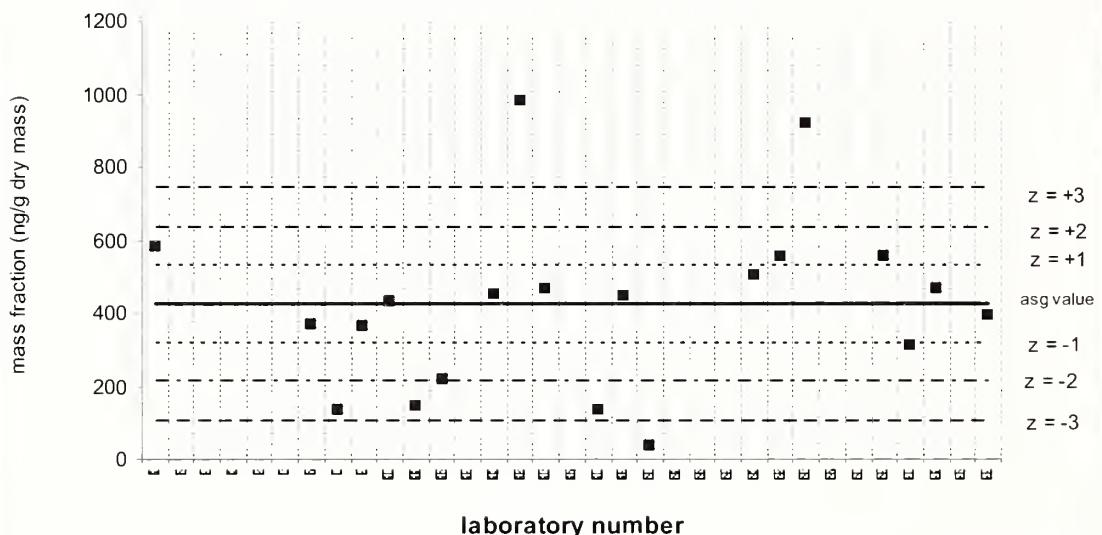
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-fluorenes

QA10SED01

Assigned value = 424 ng/g (dry mass) $s = 239$ ng/g (dry mass) 95% CI = 105 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 21 Lab 5 reported 2373 ng/g (dry mass)



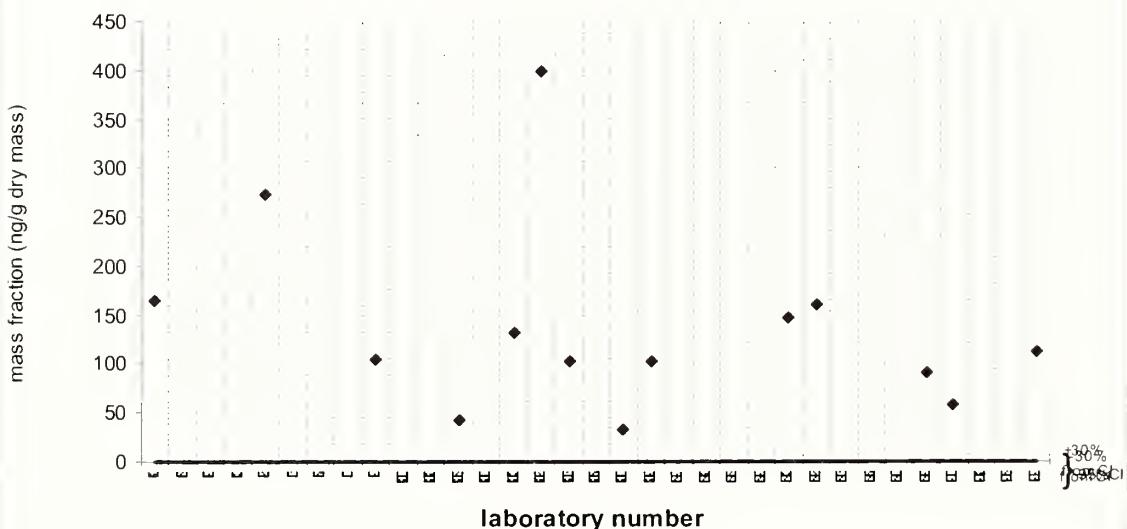
Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C2-fluorenes

SRM 1941b

Target Value = no target ng/g (dry mass)

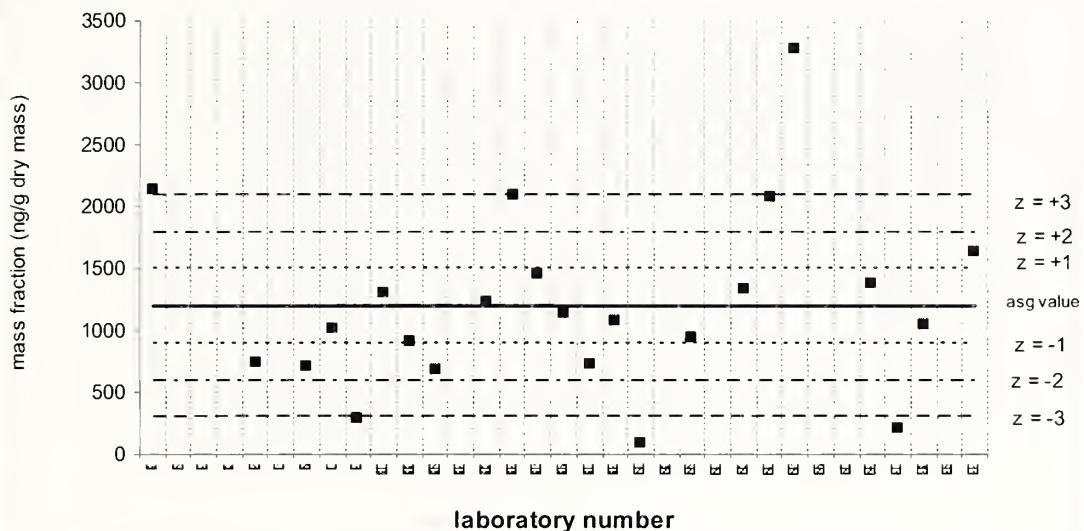
Reported Results: 20 Quantitative Results: 14



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-fluorenes**QA10SED01**Assigned value = 1196 ng/g (dry mass) $s = 715$ ng/g (dry mass) 95% CI = 292 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23

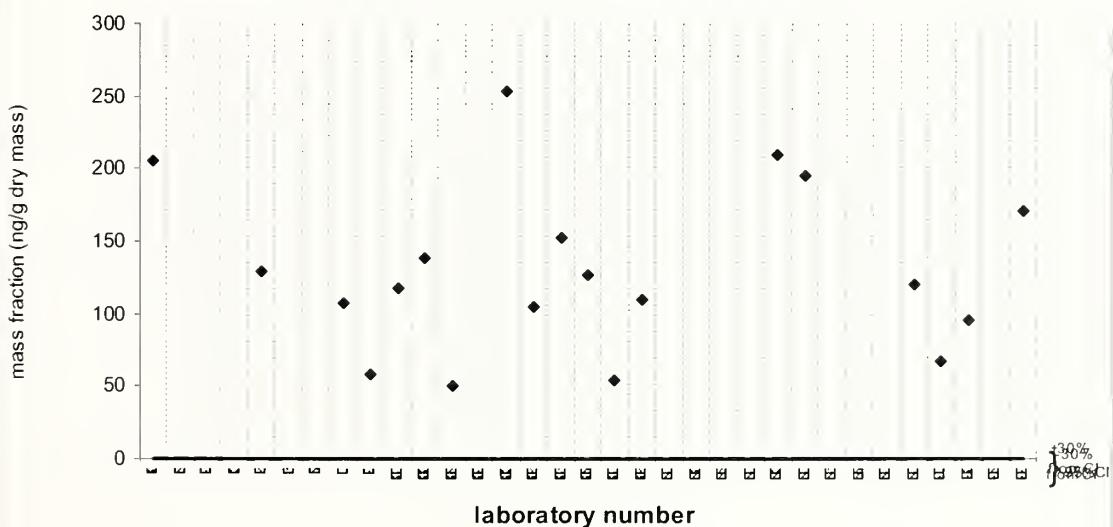


Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C3-fluorenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 19



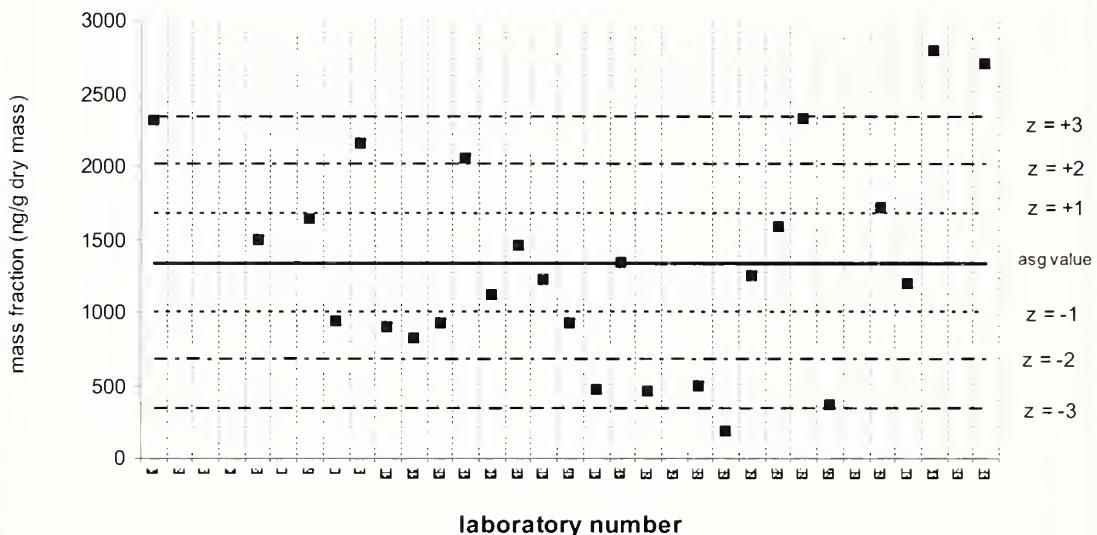
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-phenanthrenes/anthracenes

QA10SED01

Assigned value = 1338 ng/g (dry mass) $s = 721$ ng/g (dry mass) 95% CI = 277 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 26



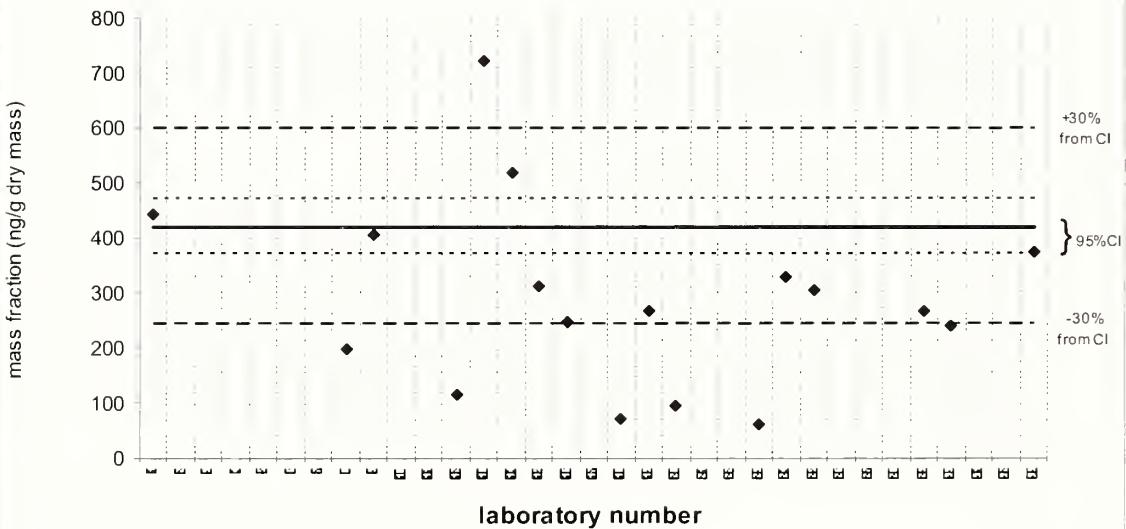
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-phenanthrenes/anthracenes

SRM 1941b

Target Value = 422 ng/g (dry mass) ; 95% CI 50 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 17



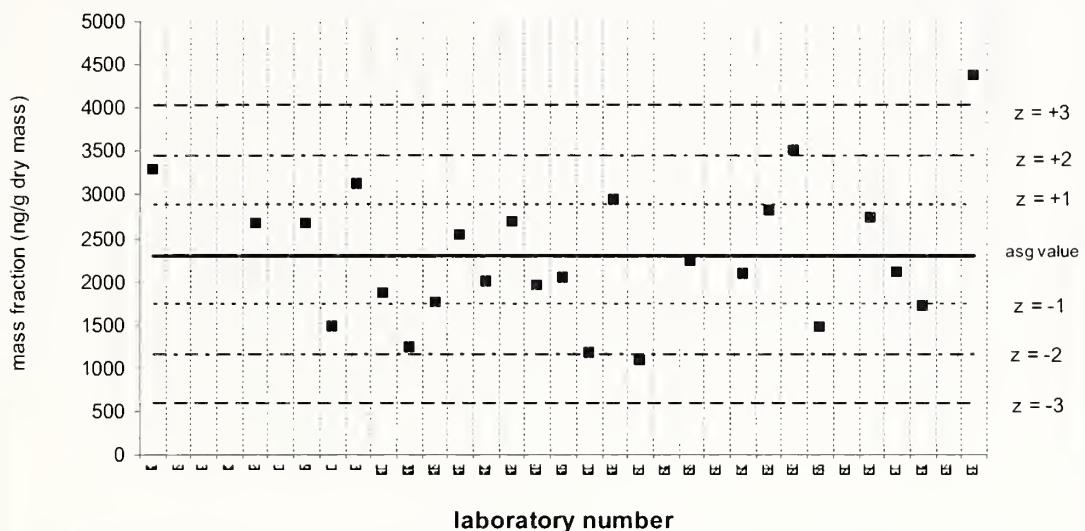
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-phenanthrenes/anthracenes

QA10SED01

Assigned value = 2300 ng/g (dry mass) $s = 795$ ng/g (dry mass) 95% CI = 311 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 25



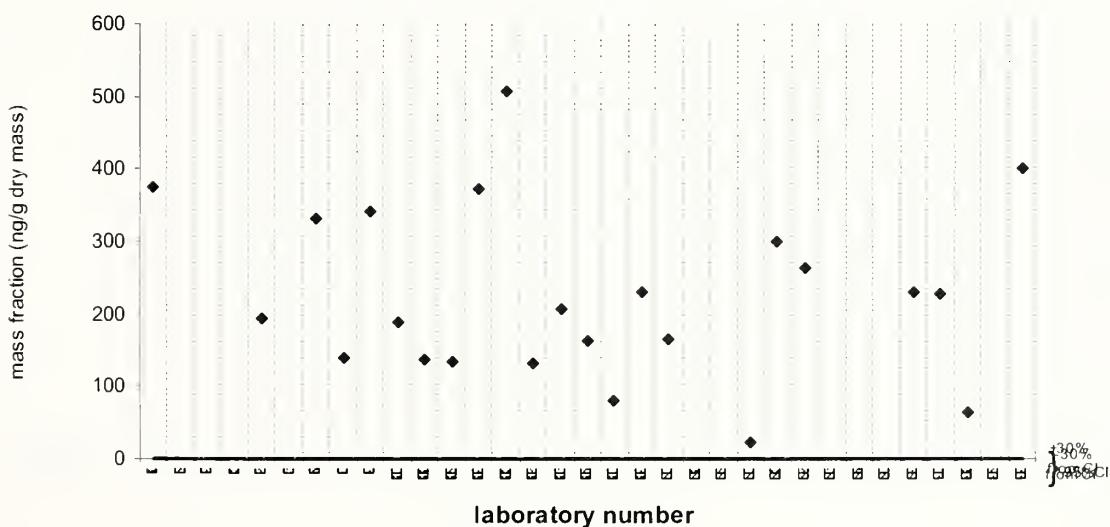
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C2-phenanthrenes/anthracenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 23 Quantitative Results: 23



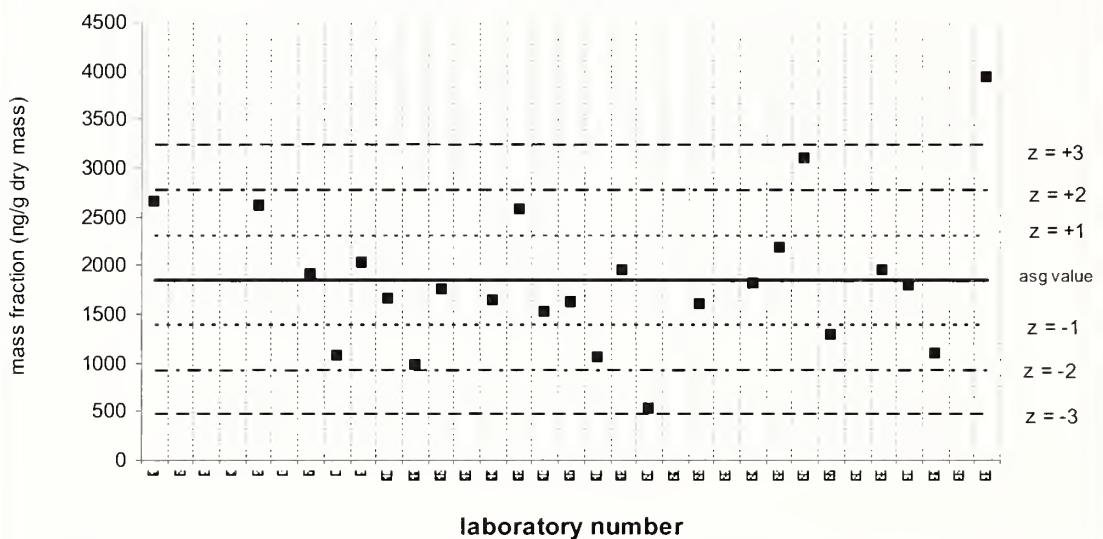
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-phenanthrenes/anthracenes

QA10SED01

Assigned value = 1845 ng/g (dry mass) $s = 744$ ng/g (dry mass) 95% CI = 297 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 24



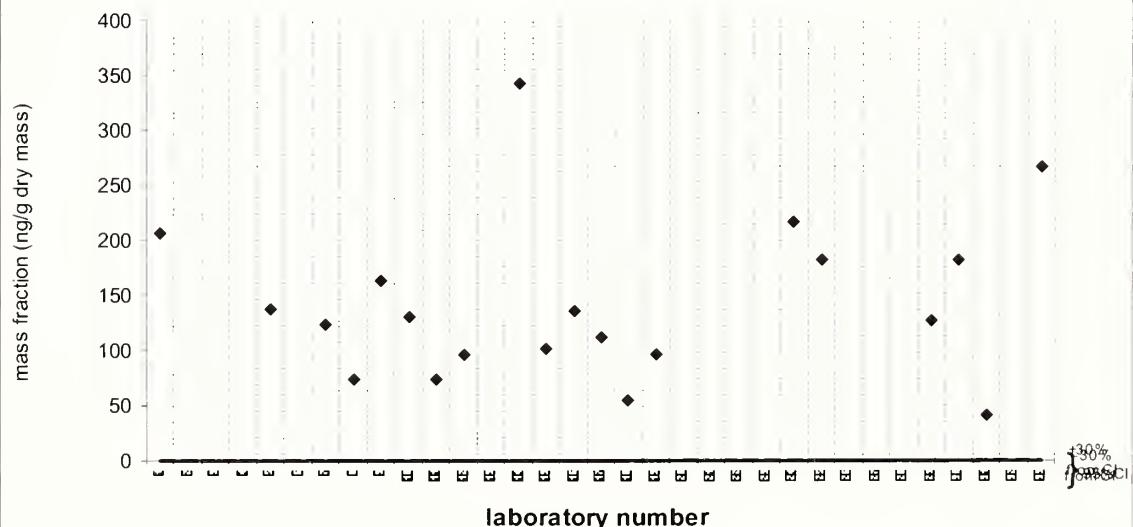
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C3-phenanthrenes/anthracenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 20



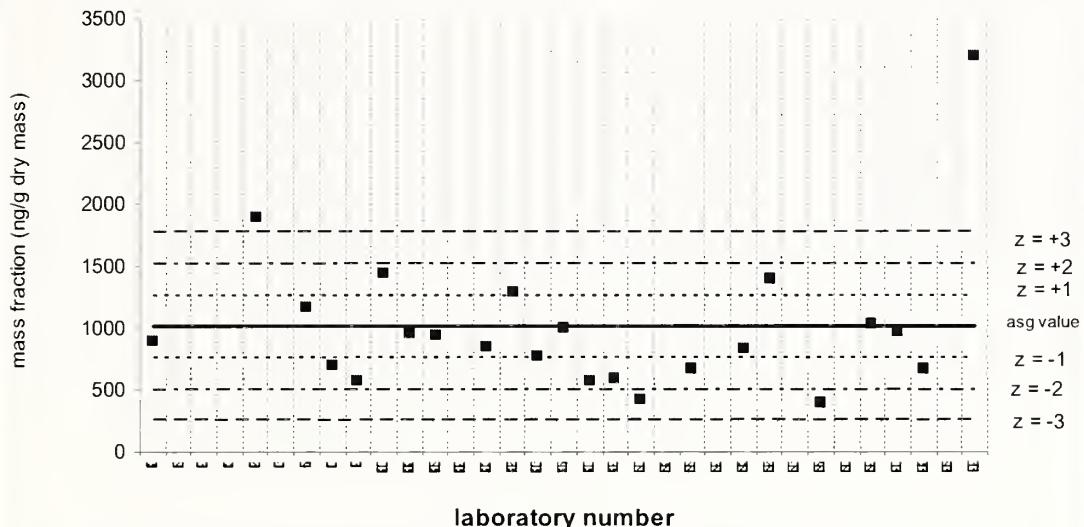
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-phenanthrenes/anthracenes

QA10SED01

Assigned value = 1010 ng/g (dry mass) $s = 593$ ng/g (dry mass) 95% CI = 242 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 24 Lab 26 reported 4877 ng/g (dry mass)



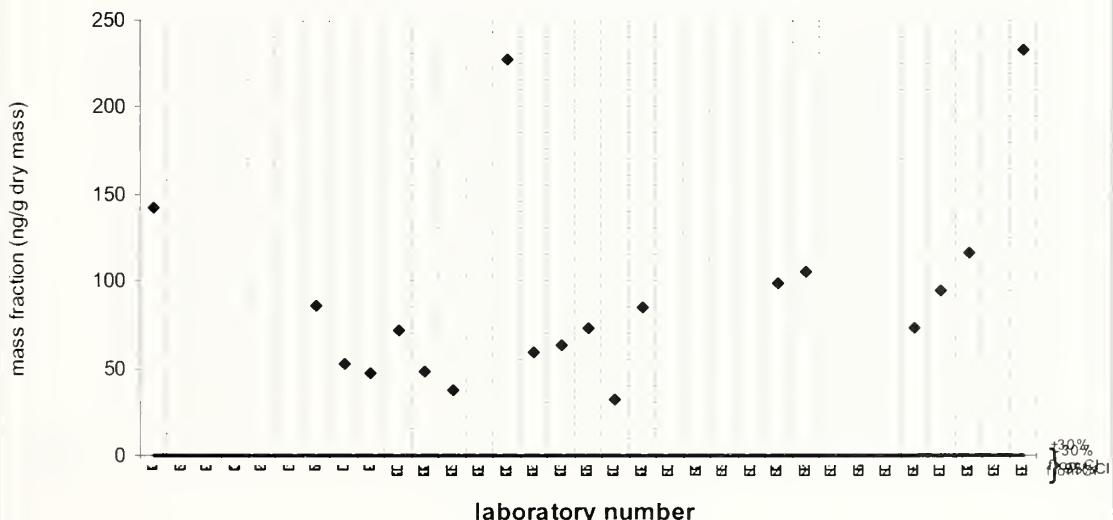
Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C4-phenanthrenes/anthracenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 21 Quantitative Results: 19



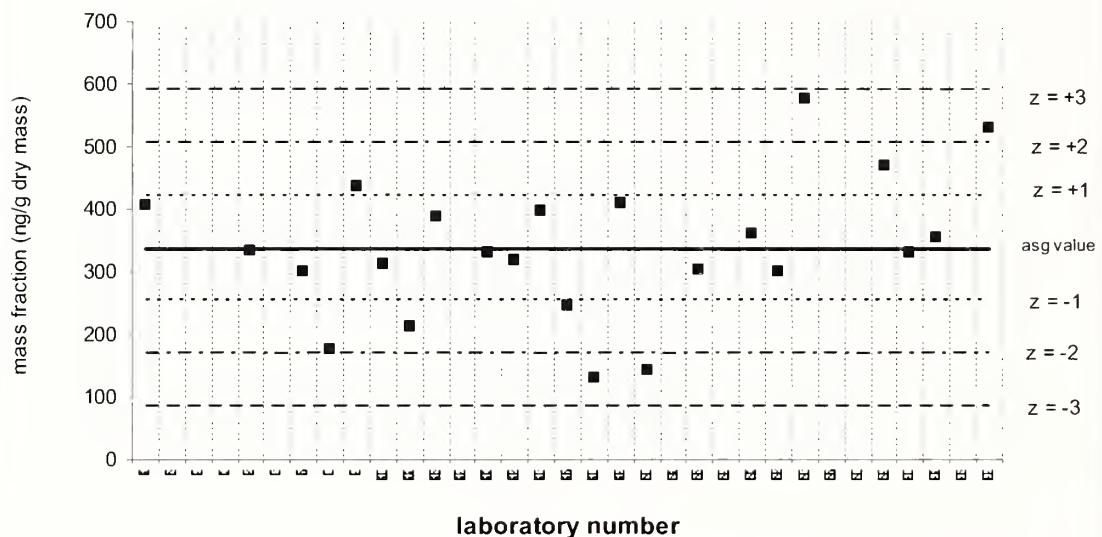
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-dibenzothiophenes

QA10SED01

Assigned value = 338 ng/g (dry mass) $s = 112$ ng/g (dry mass) 95% CI = 46 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23



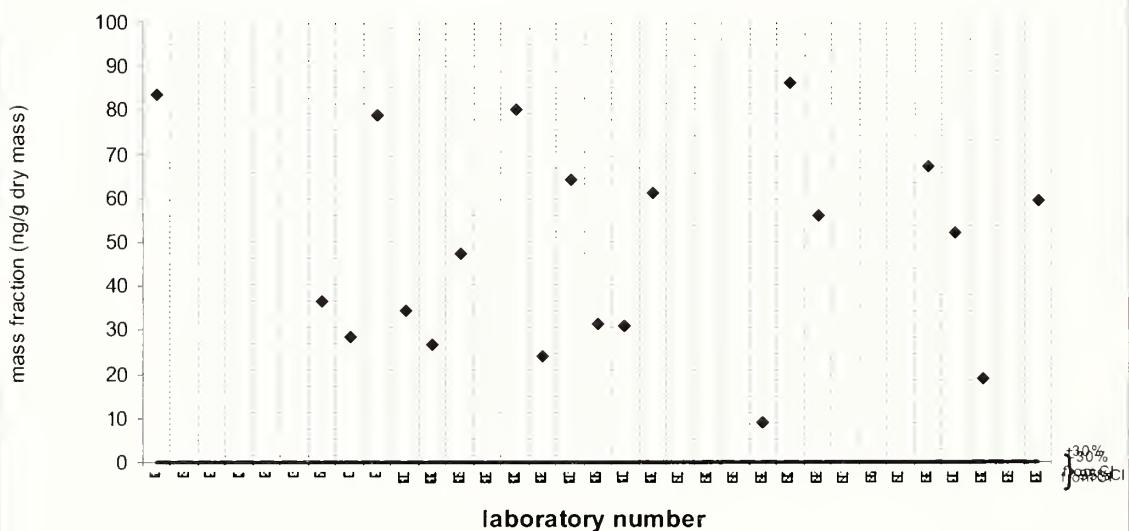
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-dibenzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

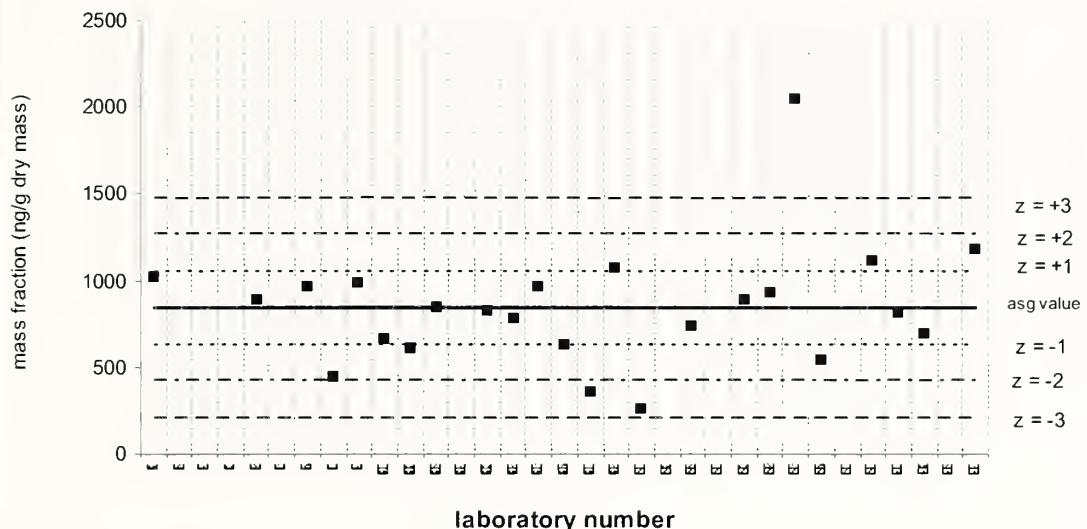
Reported Results: 22 Quantitative Results: 20



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-dibenzothiophenes**QA10SED01**Assigned value = 842 ng/g (dry mass) $s = 348$ ng/g (dry mass) 95% CI = 139 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 24

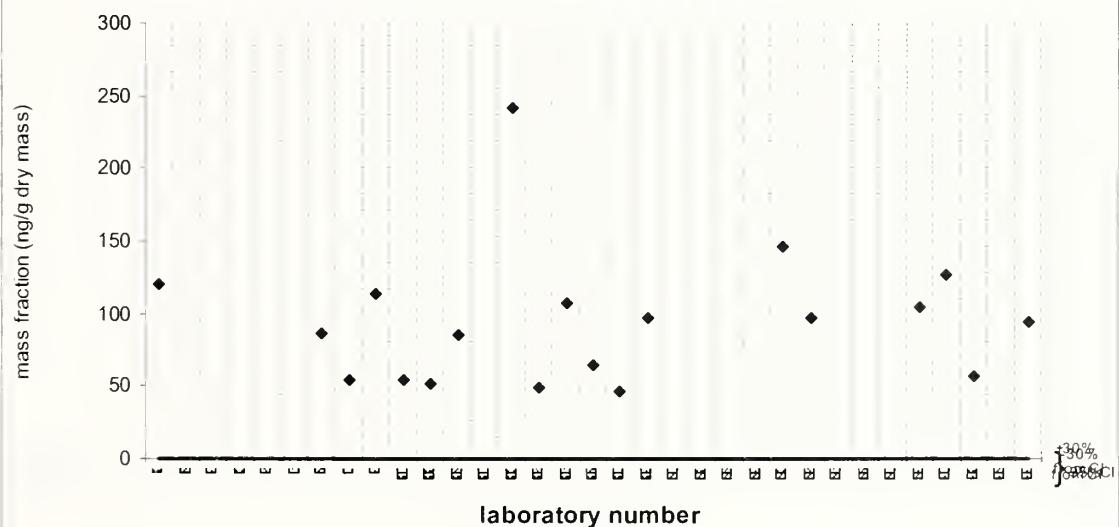


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C2-dibenzothiophenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 21 Quantitative Results: 19



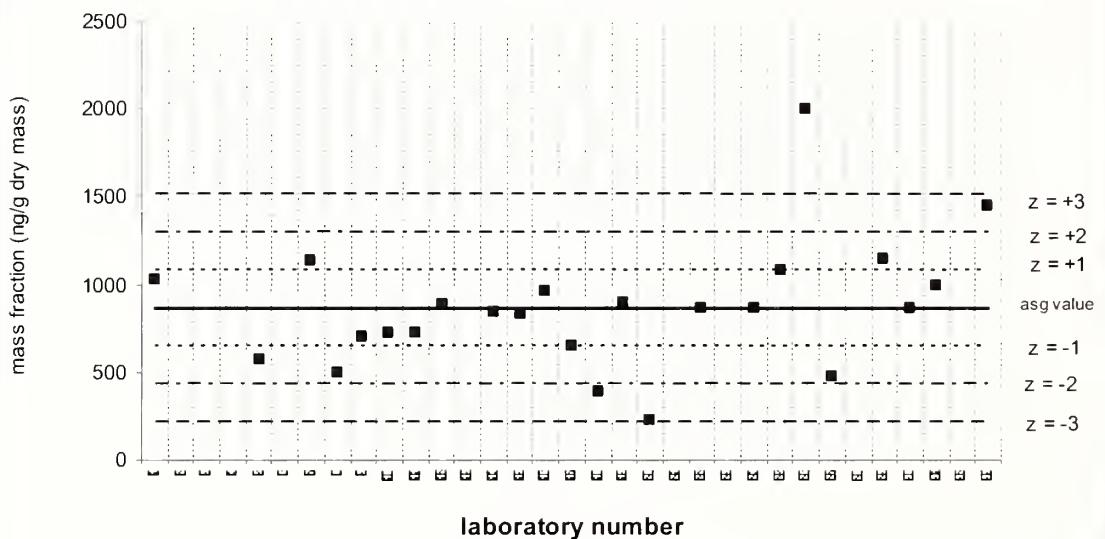
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-dibenzothiophenes

QA10SED01

Assigned value = 868 ng/g (dry mass) $s = 362$ ng/g (dry mass) 95% CI = 145 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 24



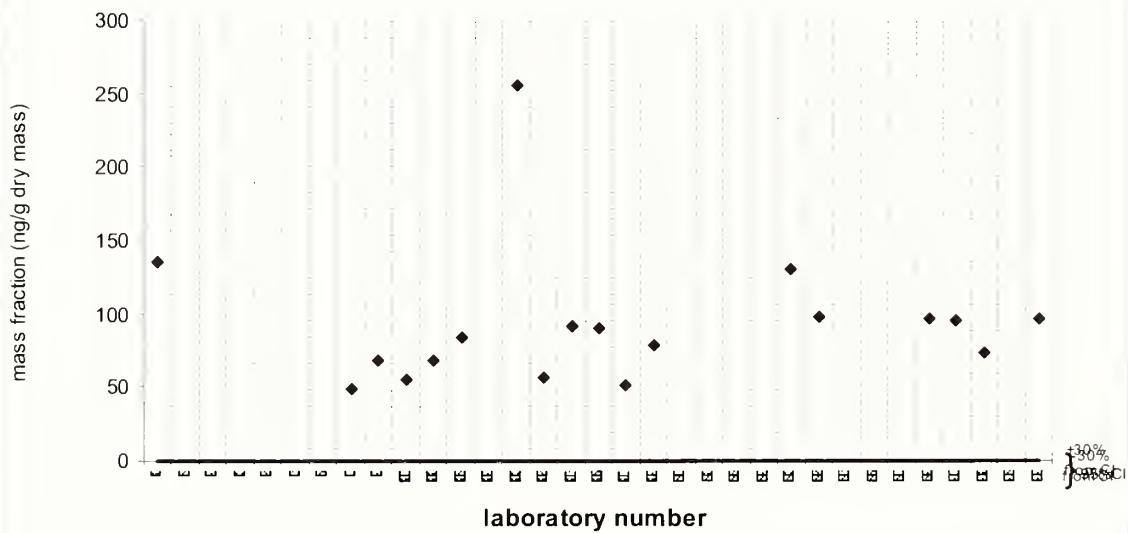
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C3-dibenzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

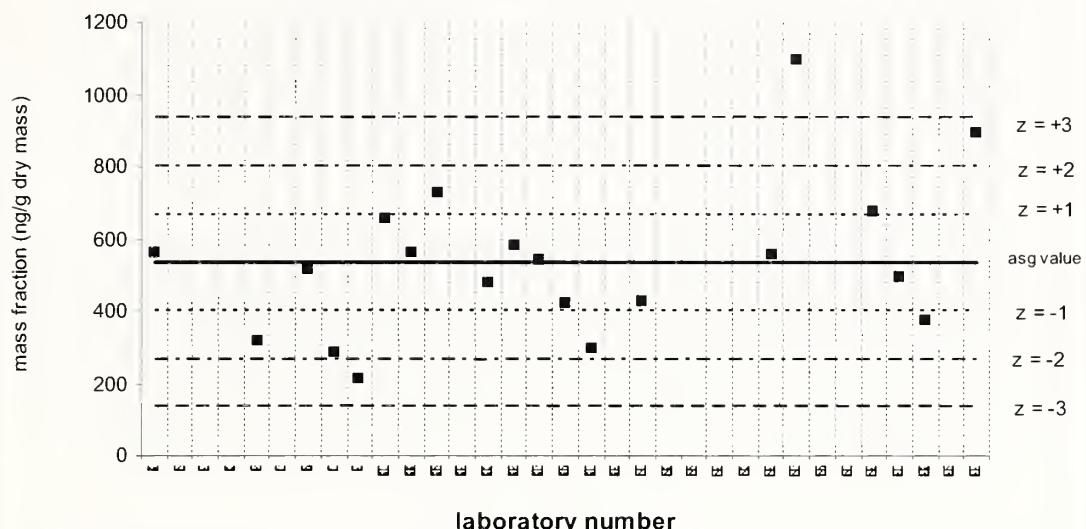
Reported Results: 21 Quantitative Results: 18



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-dibenzothiophenes**QA10SED01**Assigned value = 533 ng/g (dry mass) $s = 211$ ng/g (dry mass) 95% CI = 92 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 20

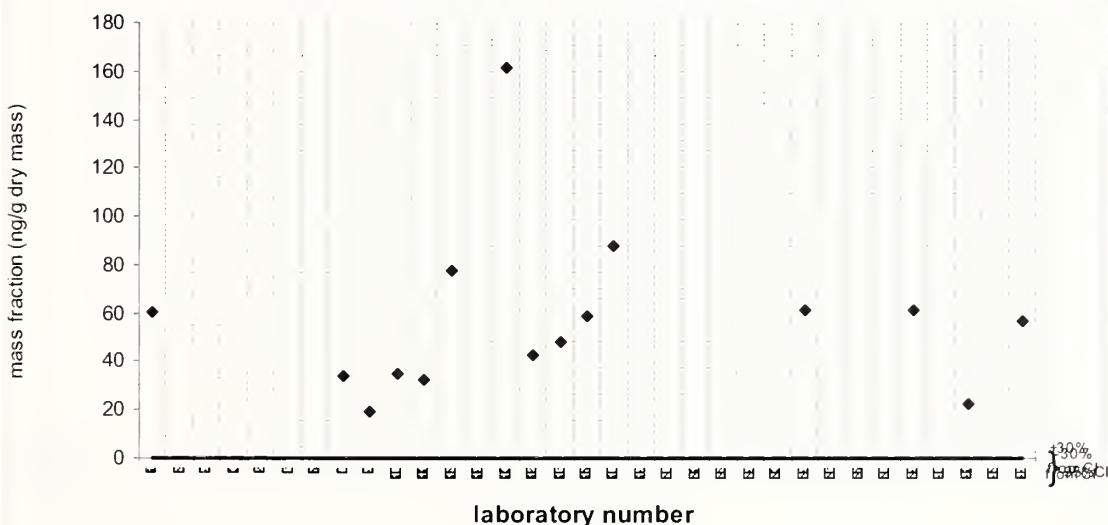


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C4-dibenzothiophenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 15



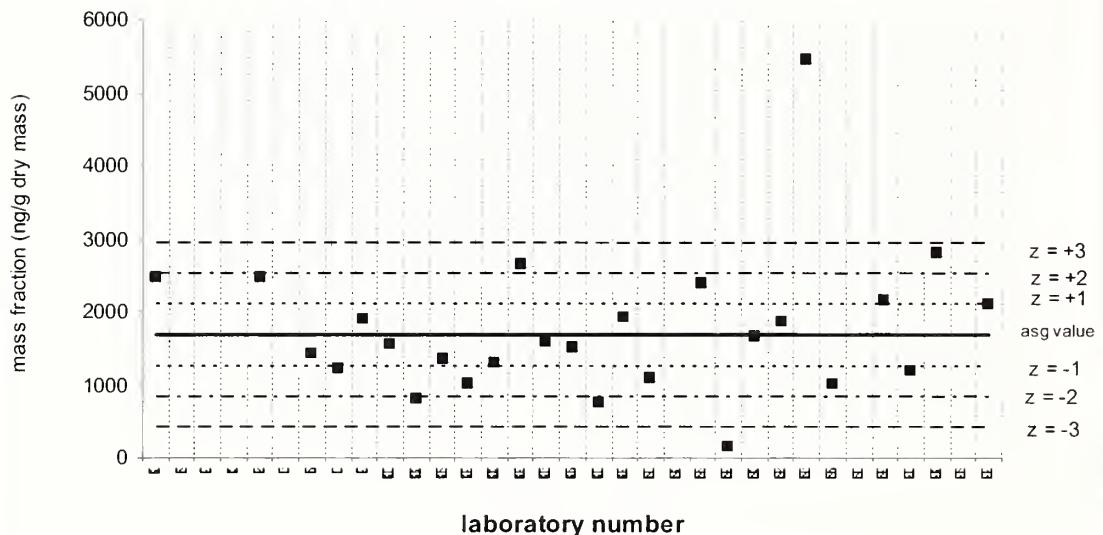
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-fluoranthenes/pyrenes

QA10SED01

Assigned value = 1677 ng/g (dry mass) $s = 596$ ng/g (dry mass) 95% CI = 238 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 26



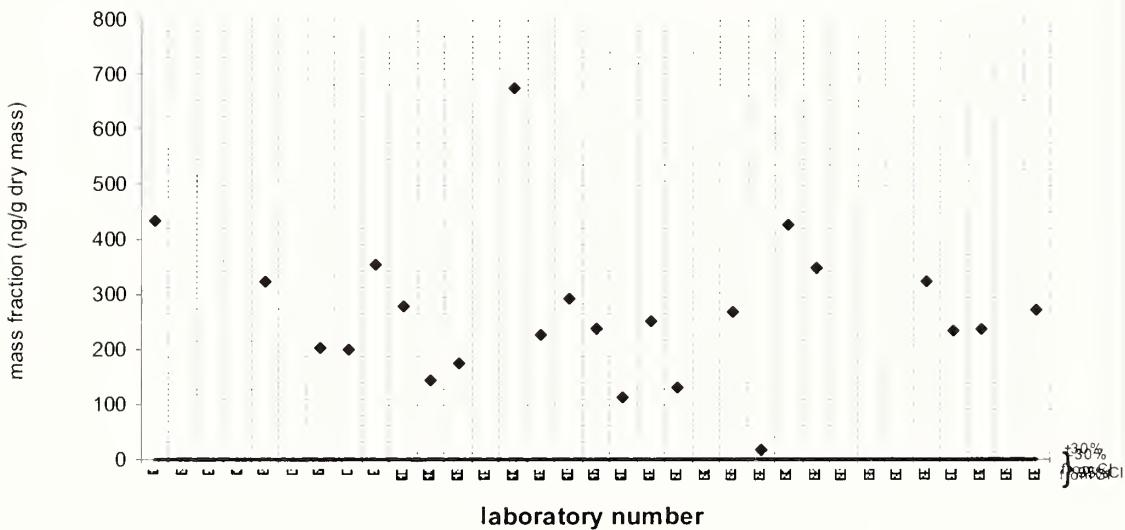
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-fluoranthenes/pyrenes

SRM 1941b

Target Value = no target ng/g (dry mass)

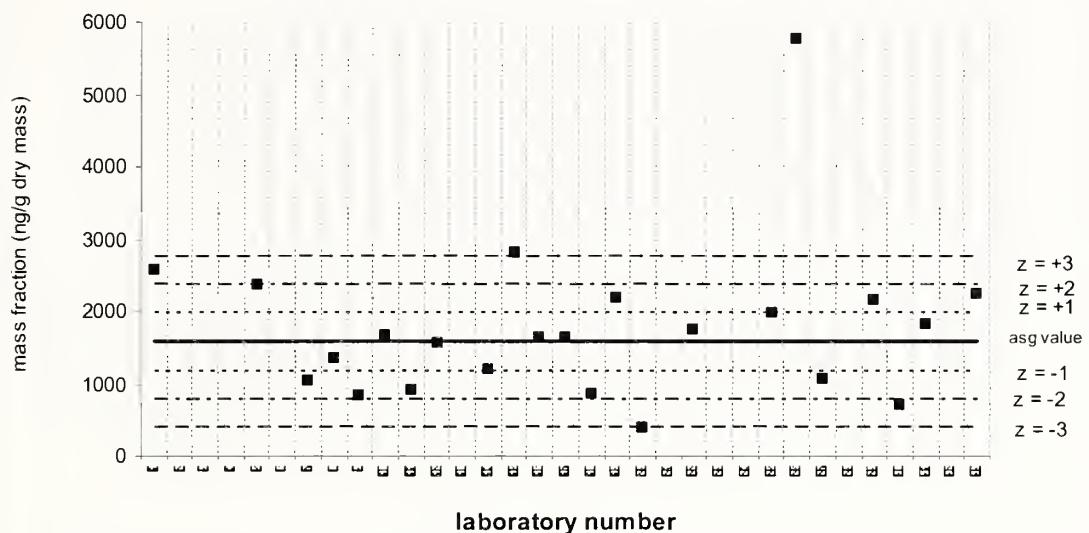
Reported Results: 23 Quantitative Results: 23



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

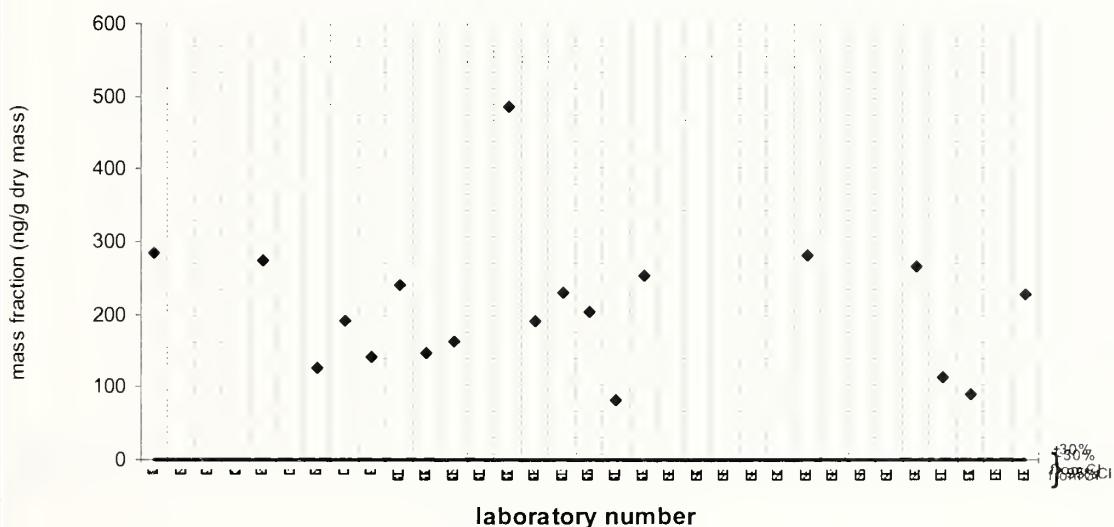
C2-fluoranthenes/pyrenes**QA10SED01**Assigned value = 1575 ng/g (dry mass) $s = 655$ ng/g (dry mass) 95% CI = 274 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 23

**C2-fluoranthenes/pyrenes****SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 19



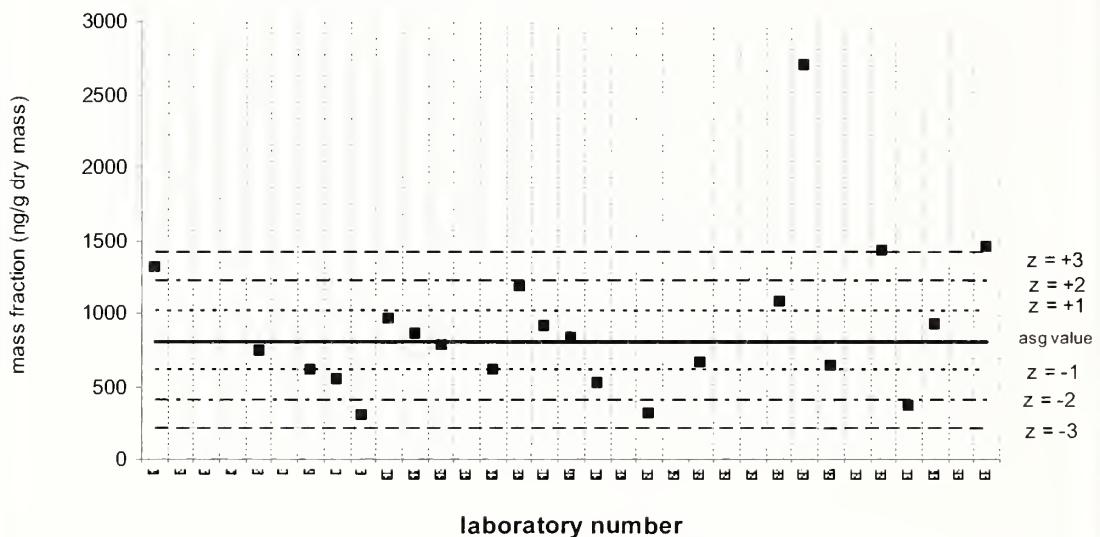
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-fluoranthenes/pyrenes

QA10SED01

Assigned value = 811 ng/g (dry mass) $s = 341$ ng/g (dry mass) 95% CI = 146 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 22

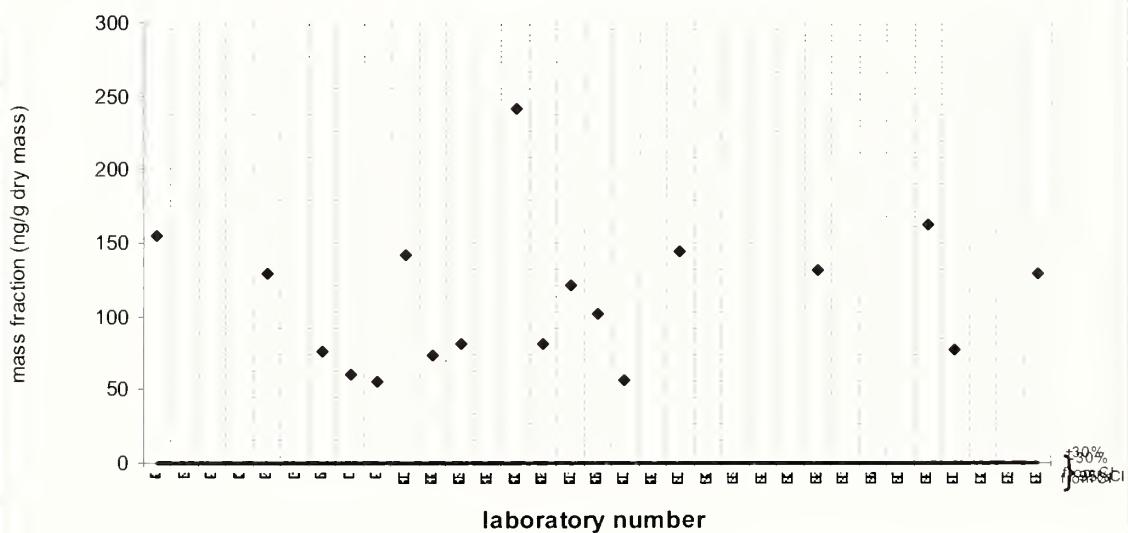


C3-fluoranthenes/pyrenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 18



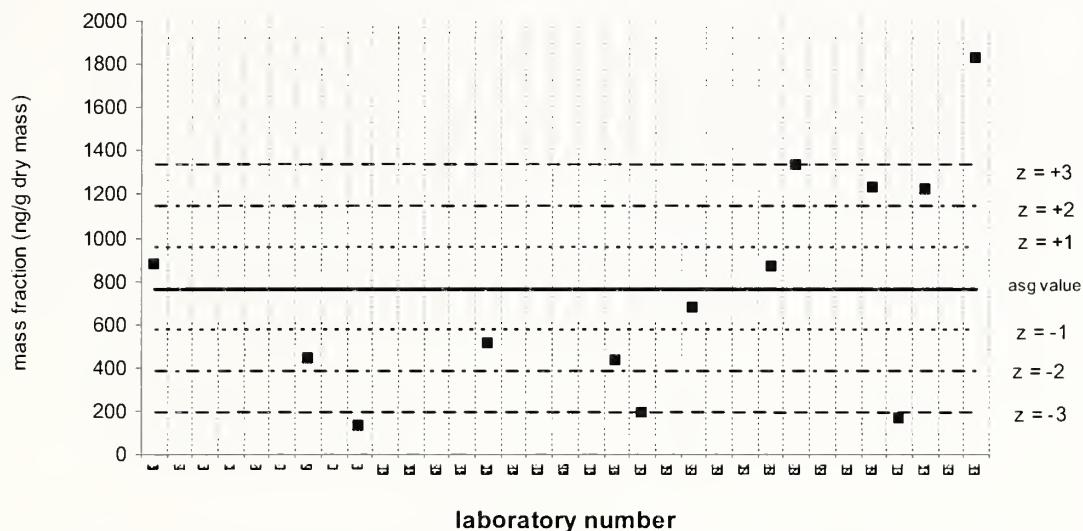
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-fluoranthenes/pyrenes

QA10SED01

Assigned value = 762 ng/g (dry mass) $s = 522$ ng/g (dry mass) 95% CI = 284 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 13



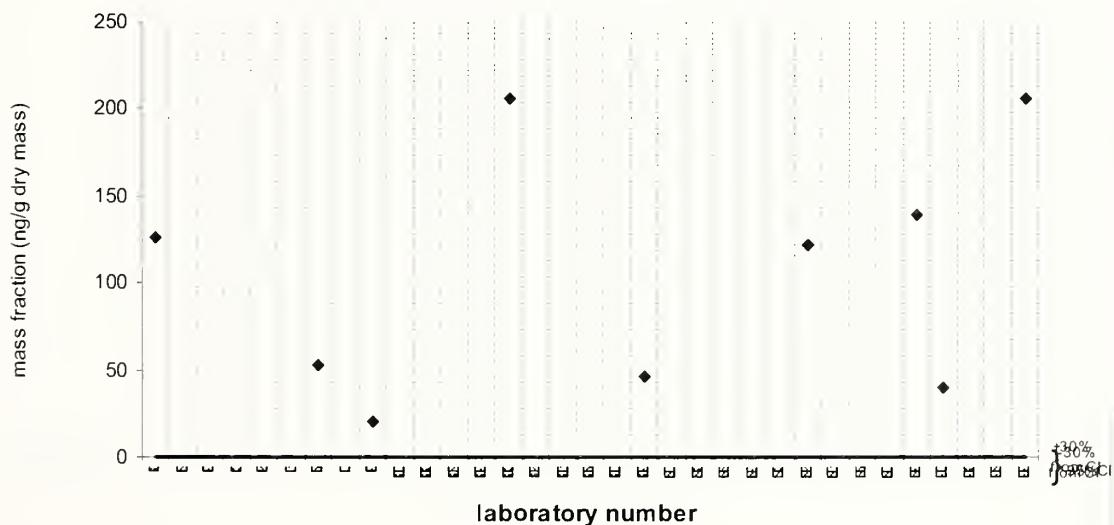
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C4-fluoranthenes/pyrenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 13 Quantitative Results: 9



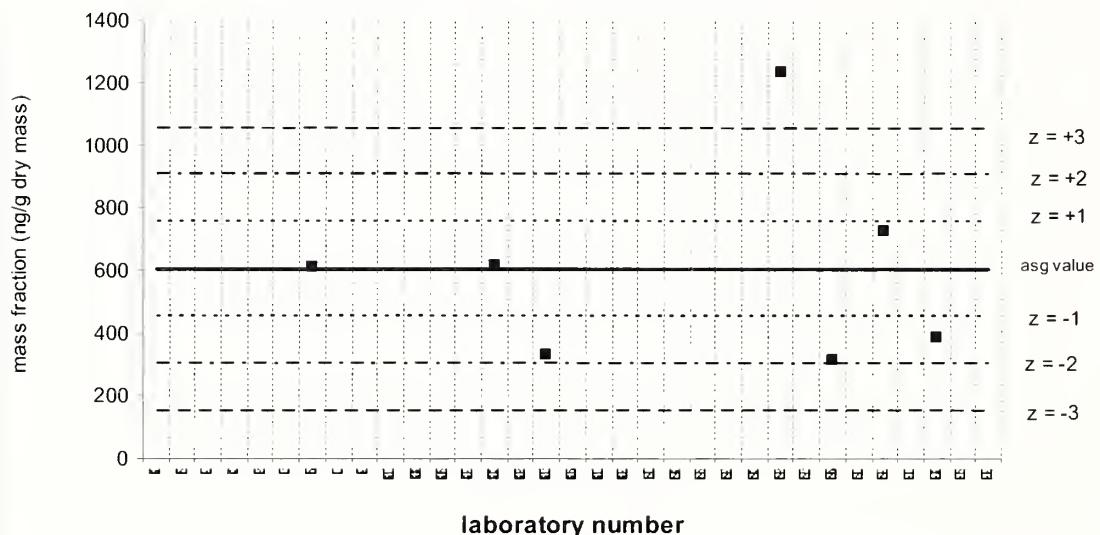
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-naphthobenzothiophenes

QA10SED01

Assigned value = 604 ng/g (dry mass) $s = 322$ ng/g (dry mass) 95% CI = 238 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 7



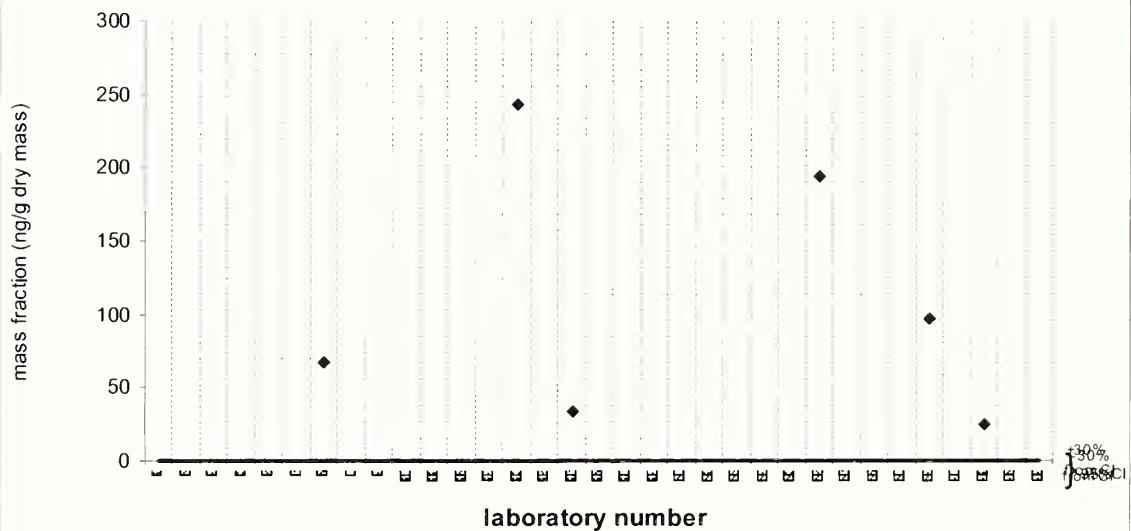
Solid line : exercise assigned value (EAV); dotted line: $z = \pm 1$ (25% from EAV); dotted/dashed line: $z = \pm 2$ (50% from EAV); dashed line: $z = \pm 3$ (75% from EAV)

C1-naphthobenzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 6 Quantitative Results: 6



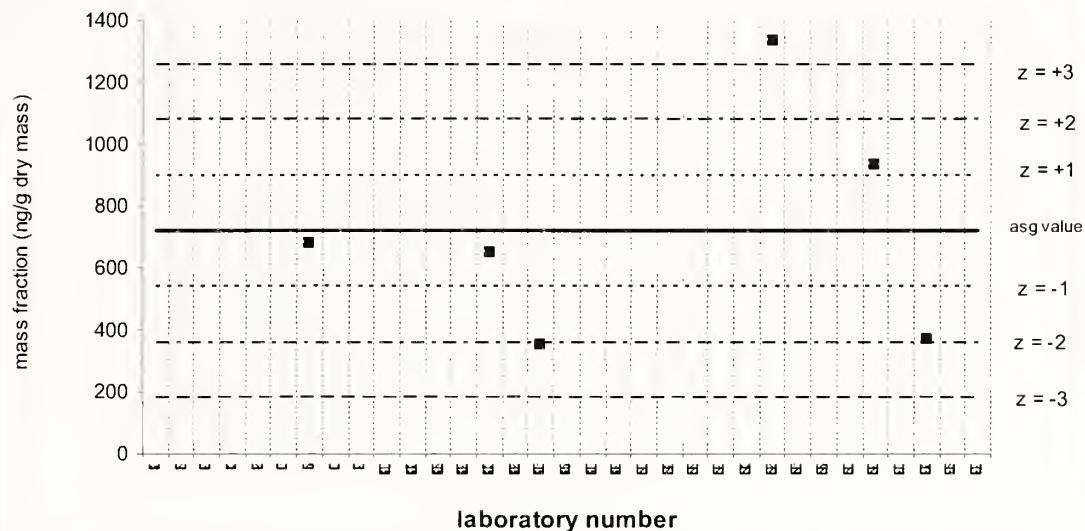
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-naphthobenzothiophenes

QA10SED01

Assigned value = 719 ng/g (dry mass) $s = 371$ ng/g (dry mass) 95% CI = 297 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6



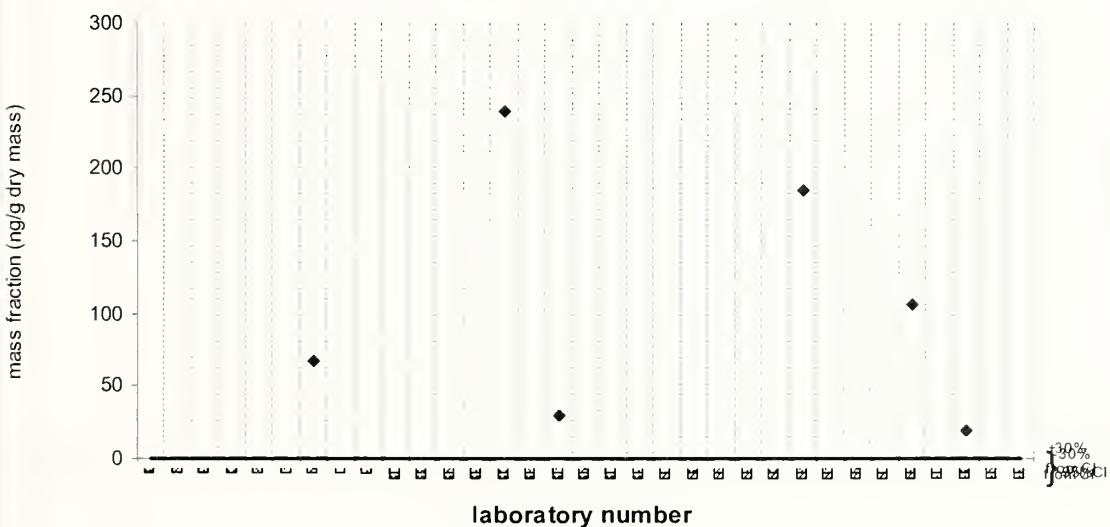
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C2-naphthobenzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

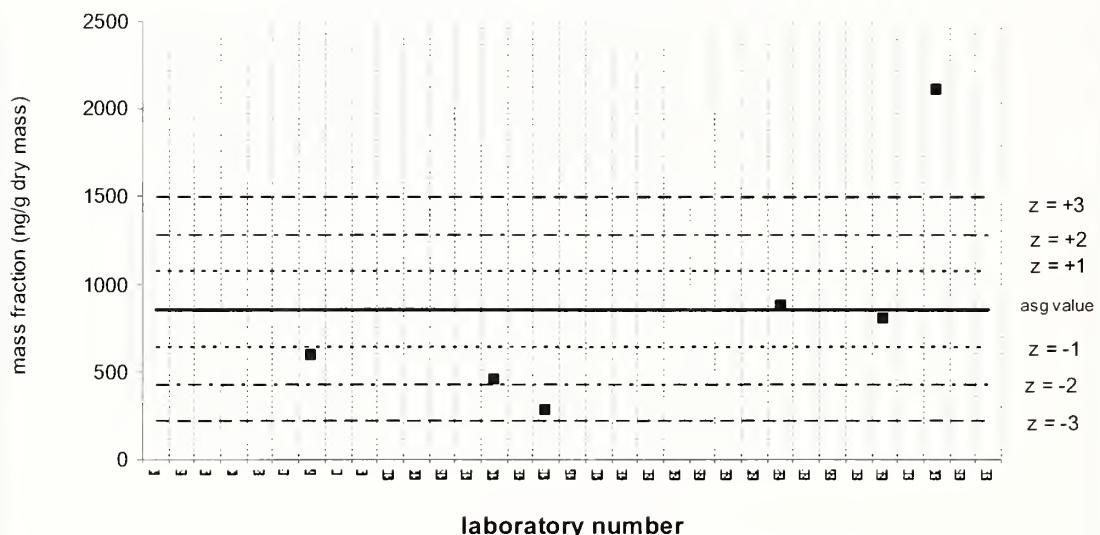
Reported Results: 6 Quantitative Results: 6



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-naphthobenzothiophenes**QA10SED01**Assigned value = 853 ng/g (dry mass) $s = 653$ ng/g (dry mass) 95% CI = 523 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6

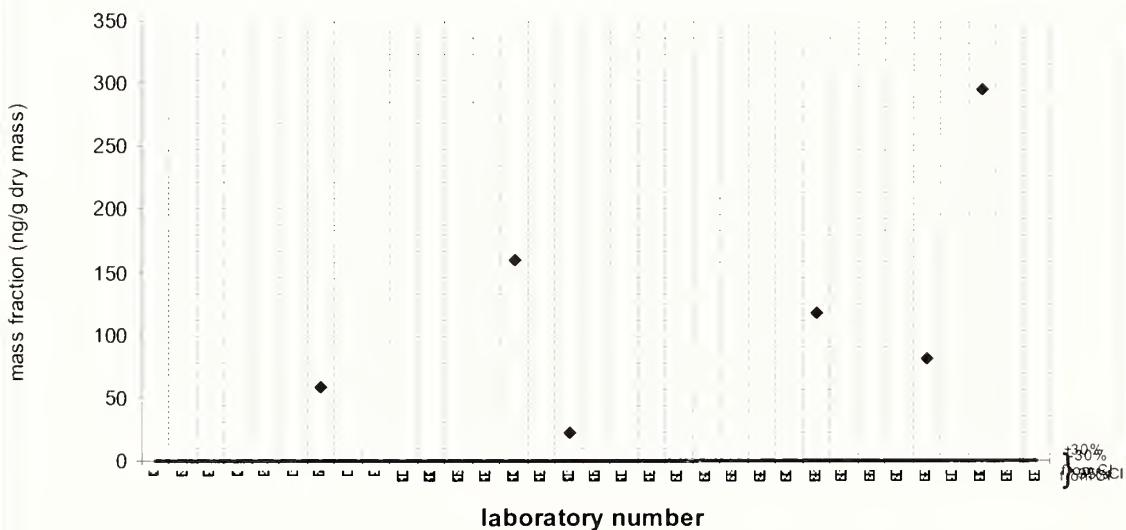


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C3-naphthobenzothiophenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 6



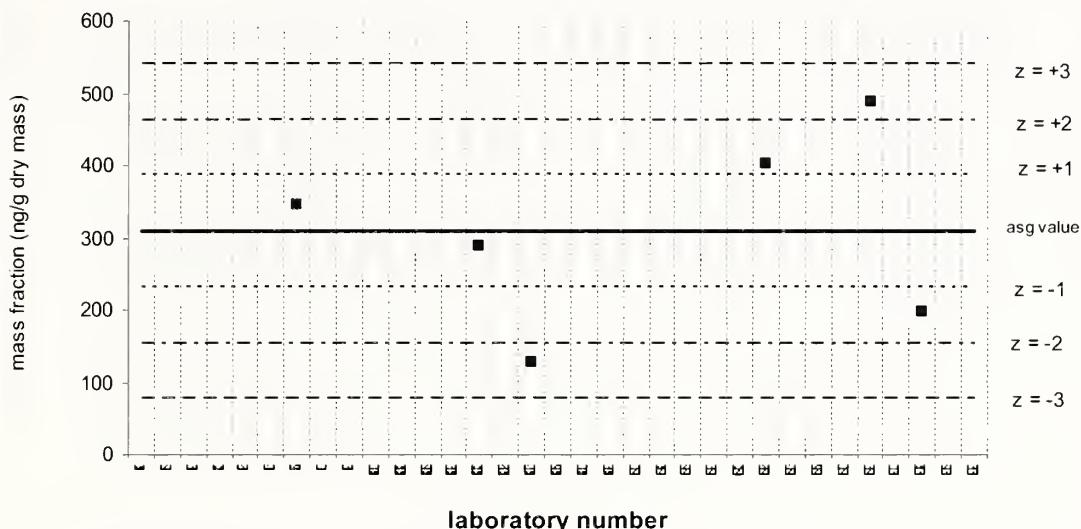
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-naphthobenzothiophenes

QA10SED01

Assigned value = 309 ng/g (dry mass) $s = 133$ ng/g (dry mass) 95% CI = 107 ng/g (dry mass)

Reported Results: 7 Quantitative Results: 6



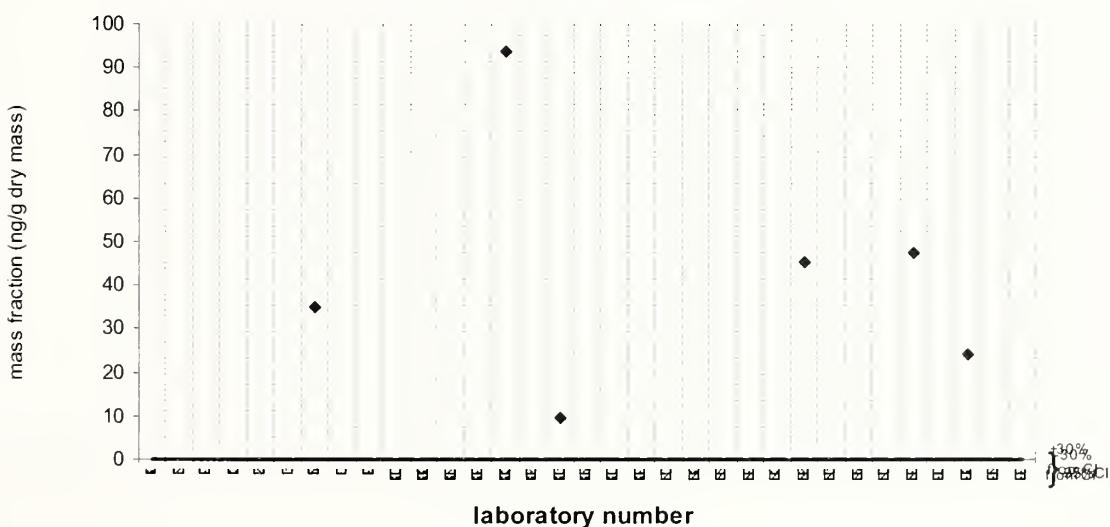
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C4-naphthobenzothiophenes

SRM 1941b

Target Value = no target ng/g (dry mass)

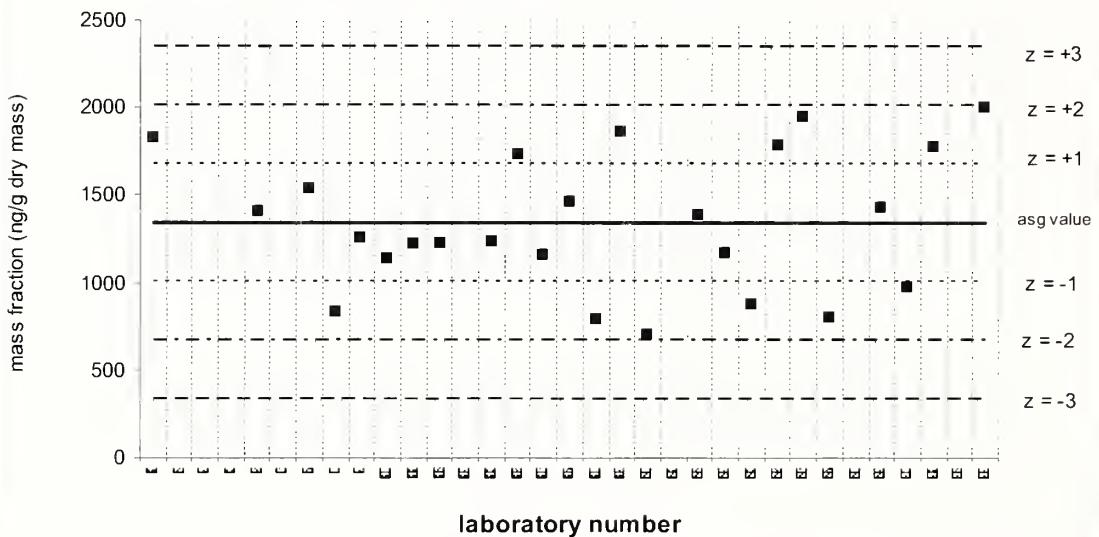
Reported Results: 7 Quantitative Results: 6



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-B[a]A/chrysenes**QA10SED01**Assigned value = 1342 ng/g (dry mass) $s = 392$ ng/g (dry mass) 95% CI = 154 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 25

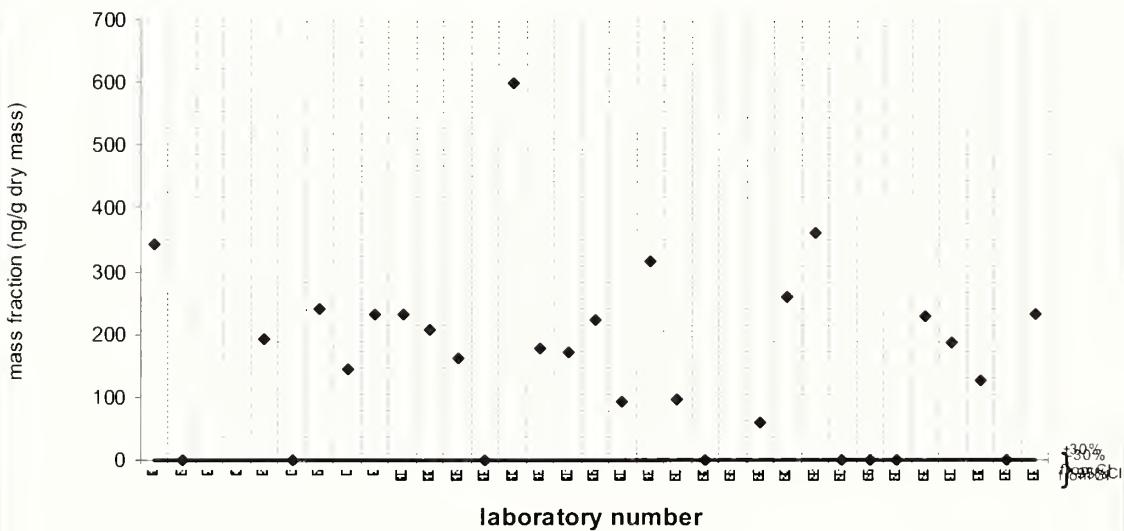


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C1-B[a]A/chrysenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

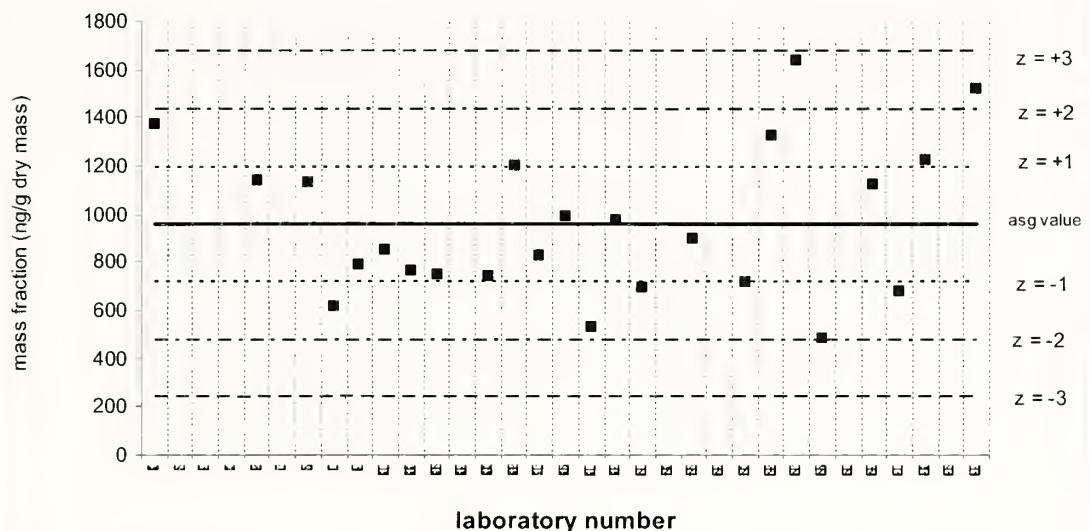
Reported Results: 22 Quantitative Results: 22



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

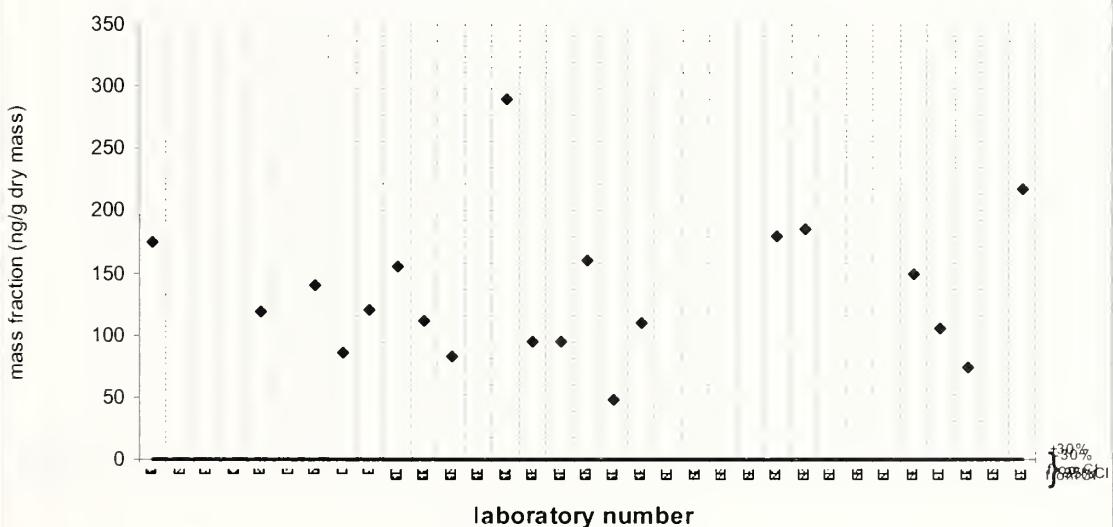
C2-B[a]A/chrysenes**QA10SED01**Assigned value = 956 ng/g (dry mass) $s = 311$ ng/g (dry mass) 95% CI = 125 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 24

**C2-B[a]A/chrysenes****SRM 1941b**

Target Value = no target ng/g (dry mass)

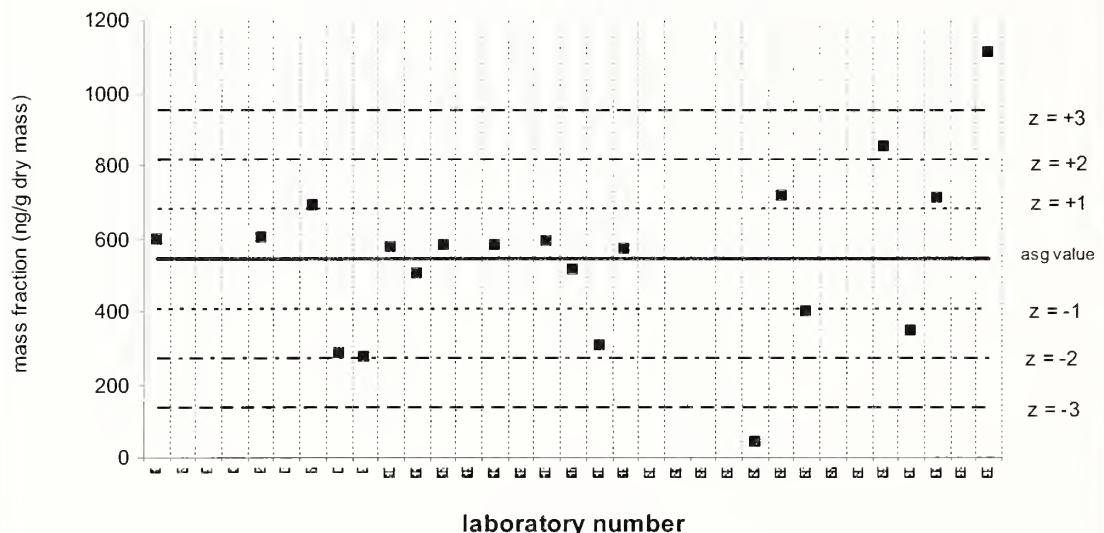
Reported Results: 22 Quantitative Results: 20



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-B[a]A/chrysene**QA10SED01**Assigned value = 543 ng/g (dry mass) $s = 232$ ng/g (dry mass) 95% CI = 102 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 20

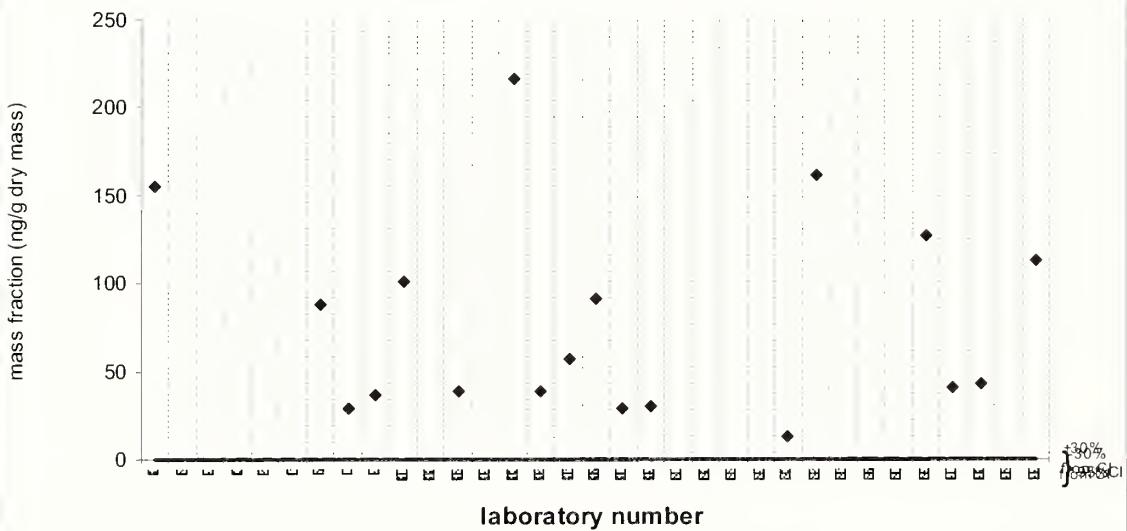


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C3-B[a]A/chrysene**SRM 1941b**

Target Value = no target ng/g (dry mass)

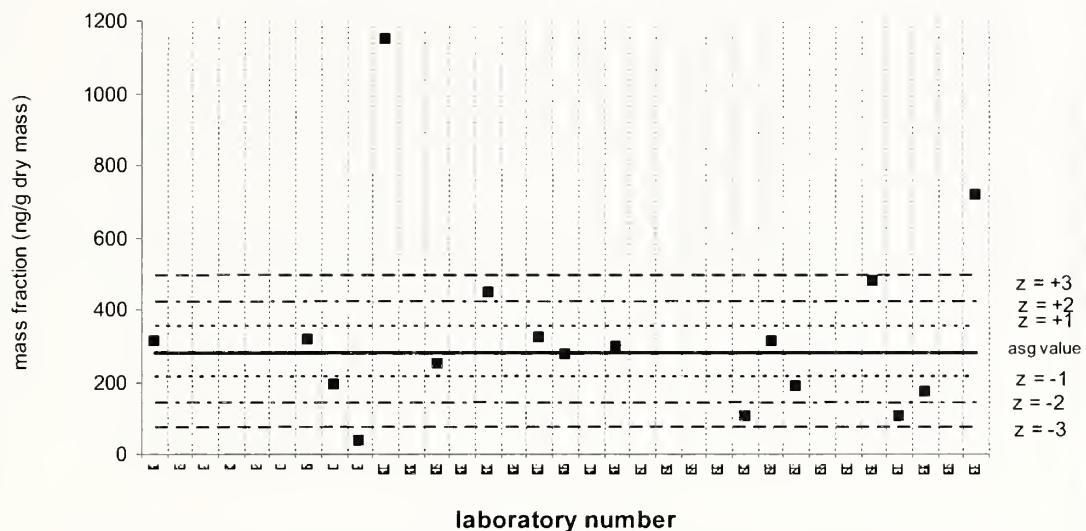
Reported Results: 21 Quantitative Results: 18



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-B[a]A/chrysenes**QA10SED01**Assigned value = 282 ng/g (dry mass) $s = 165$ ng/g (dry mass) 95% CI = 81 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 17

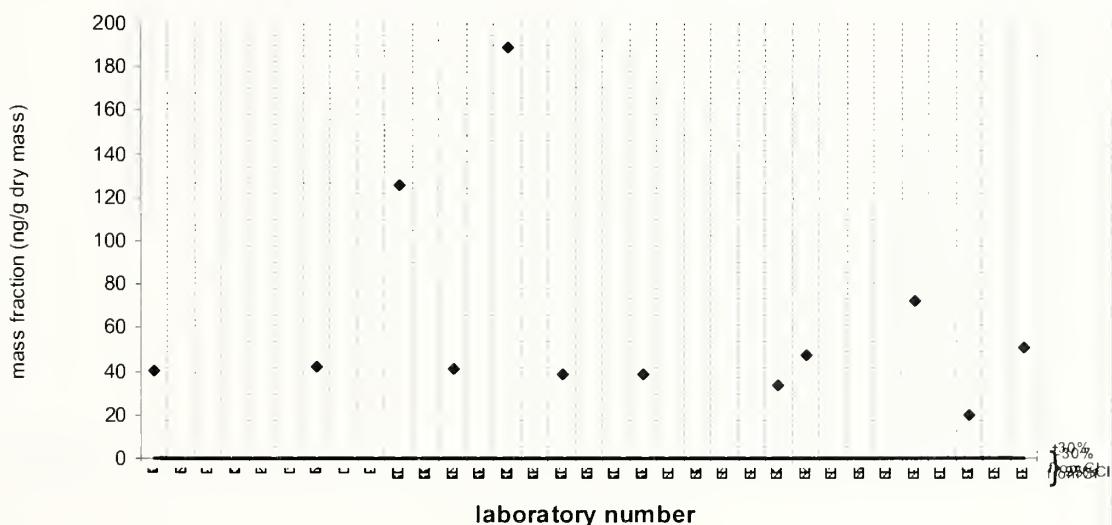


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

C4-B[a]A/chrysenes**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 12



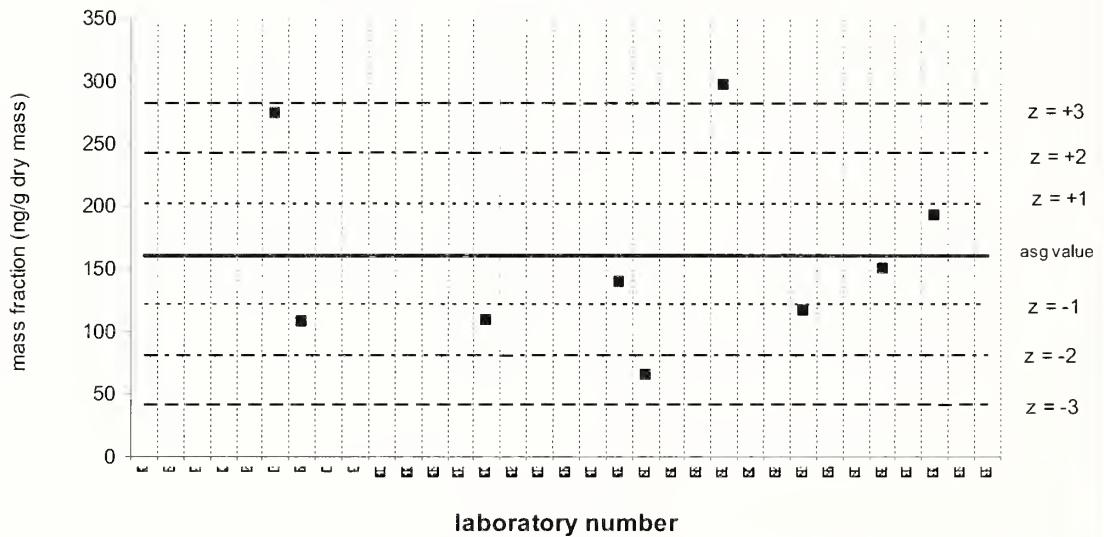
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Carbazole

QA10SED01

Assigned value = 161 ng/g (dry mass) $s = 78$ ng/g (dry mass) 95% CI = 51 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 9



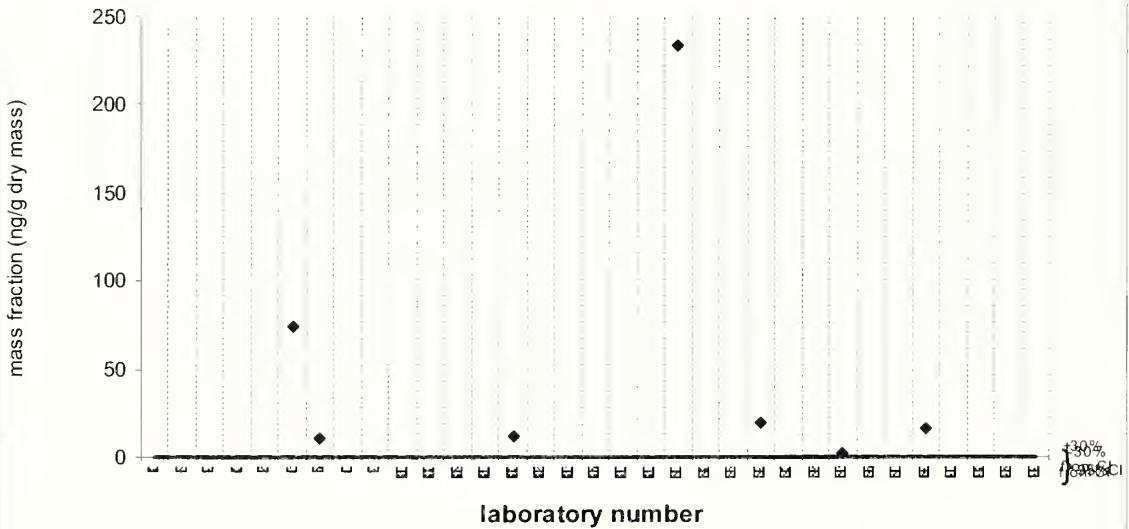
Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

Carbazole

SRM 1941b

Target Value = no target ng/g (dry mass)

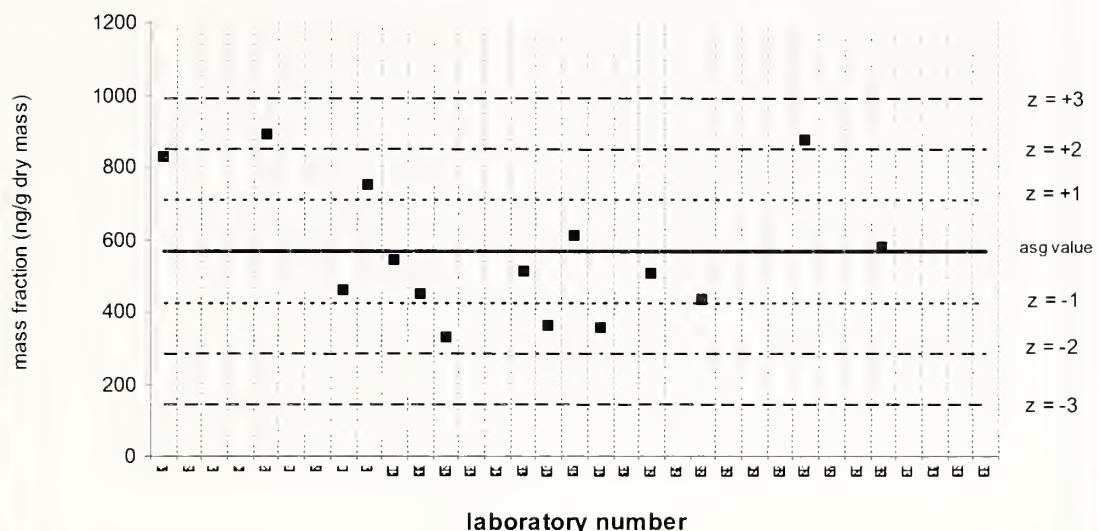
Reported Results: 9 Quantitative Results: 7



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

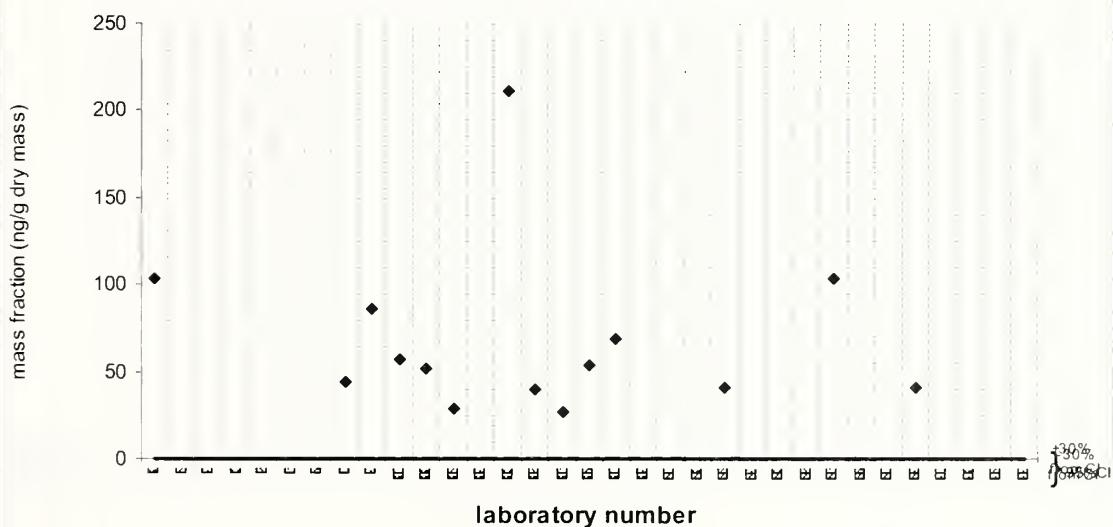
17 α (H)-22,29,30-Tisnorhopane**QA10SED01**Assigned value = 564 ng/g (dry mass) $s = 189$ ng/g (dry mass) 95% CI = 99 ng/g (dry mass)

Reported Results: 17 Quantitative Results: 15

**17 α (H)-22,29,30-Tisnorhopane****SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 17 Quantitative Results: 14

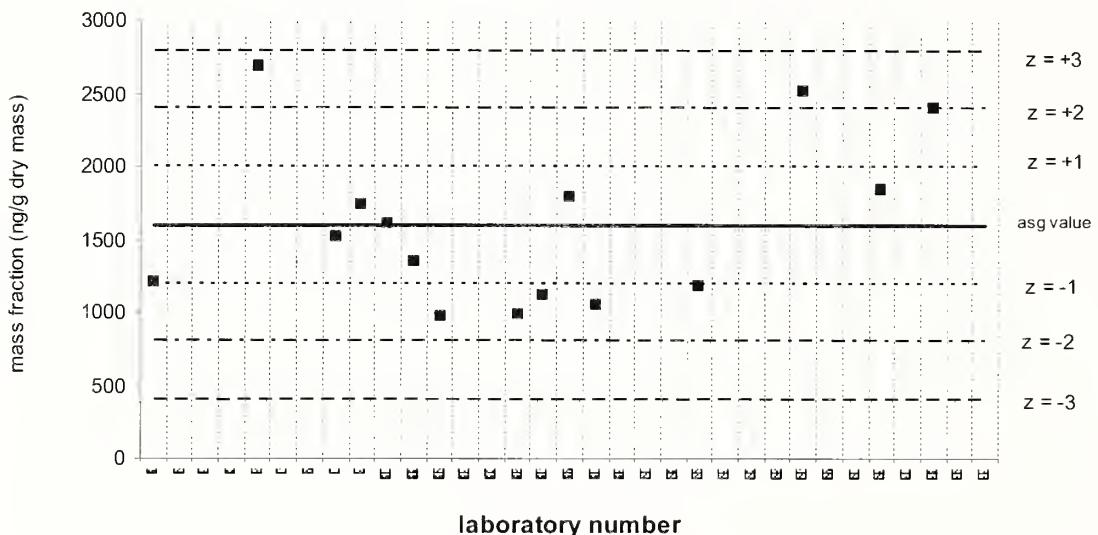


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17 α (H),21 β (H)-30-Norhopane**QA10SED01**

Assigned value = 1599 ng/g (dry mass) s = 566 ng/g (dry mass) 95% CI = 286 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 15

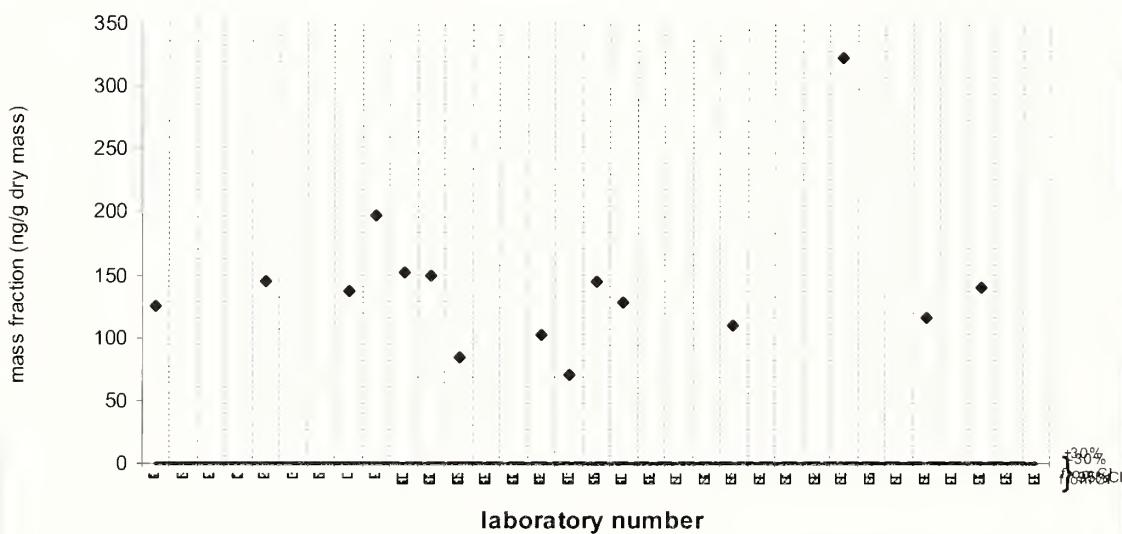


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

17 α (H),21 β (H)-30-Norhopane**SRM 1941b**

Target Value = no target ng/g (dry mass)

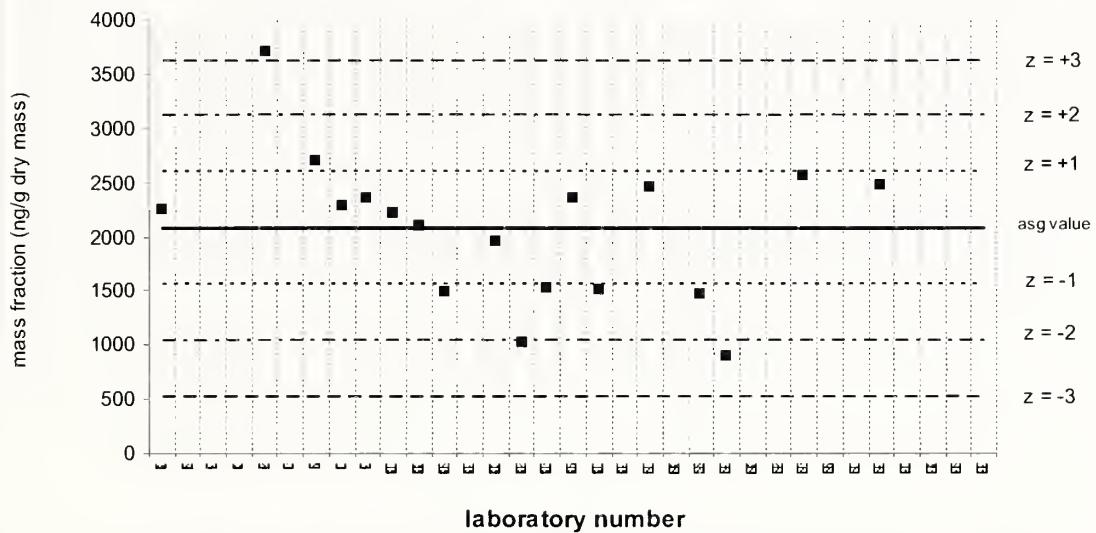
Reported Results: 15 Quantitative Results: 15



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

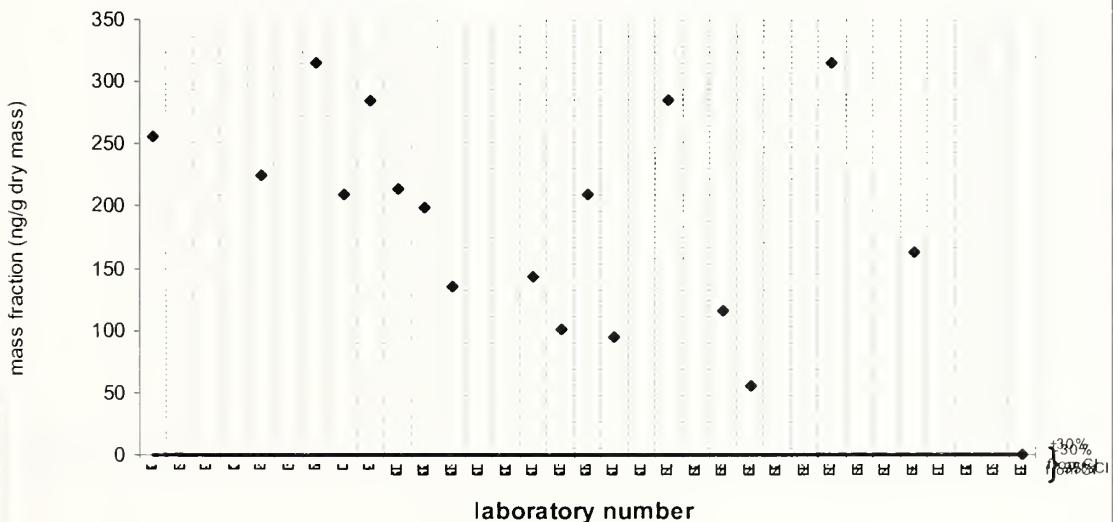
17 α (H),21 β (H)-Hopane**QA10SED01**Assigned value = 2073 ng/g (dry mass) $s = 672$ ng/g (dry mass) 95% CI = 311 ng/g (dry mass)

Reported Results: 18 Quantitative Results: 18

**17 α (H),21 β (H)-Hopane****SRM 1941b**

Target Value = no target ng/g (dry mass)

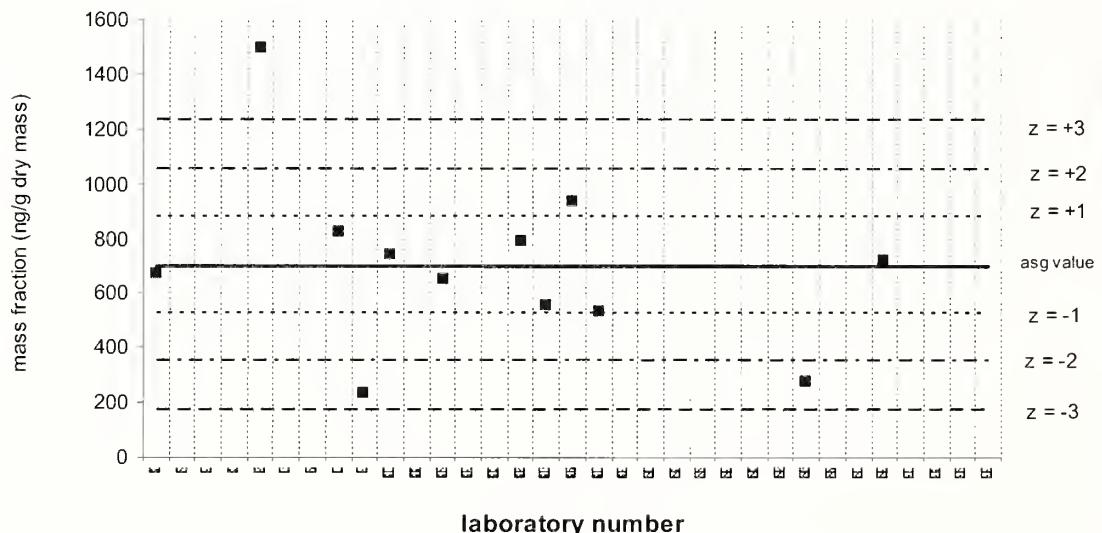
Reported Results: 17 Quantitative Results: 17



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

$\alpha\alpha$ 20R-Cholestane**QA10SED01**Assigned value = 703 ng/g (dry mass) $s = 325$ ng/g (dry mass) 95% CI = 184 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 12

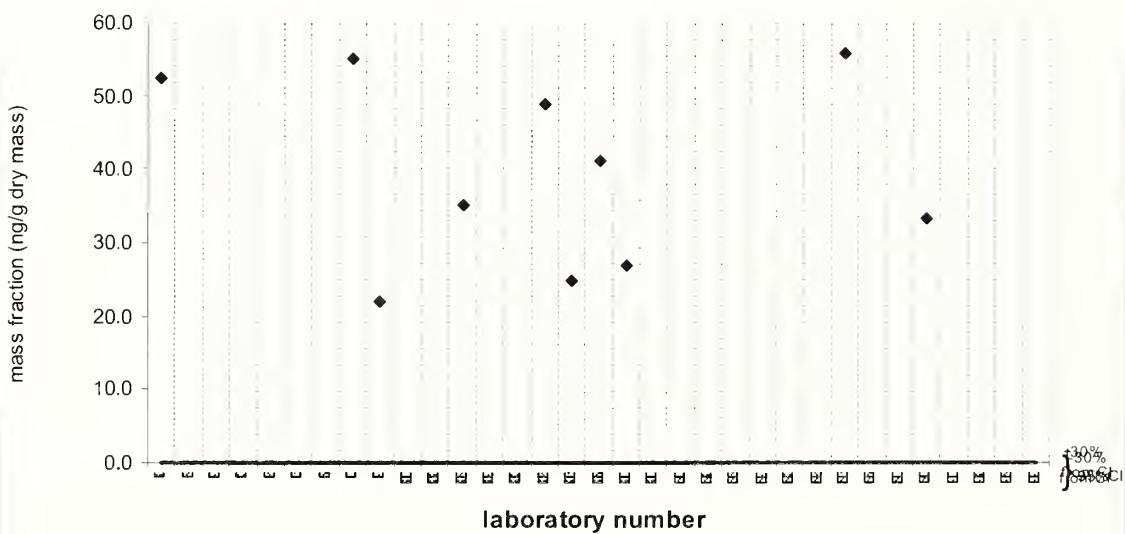


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

 $\alpha\alpha$ 20R-Cholestane**SRM 1941b**

Target Value = no target ng/g (dry mass)

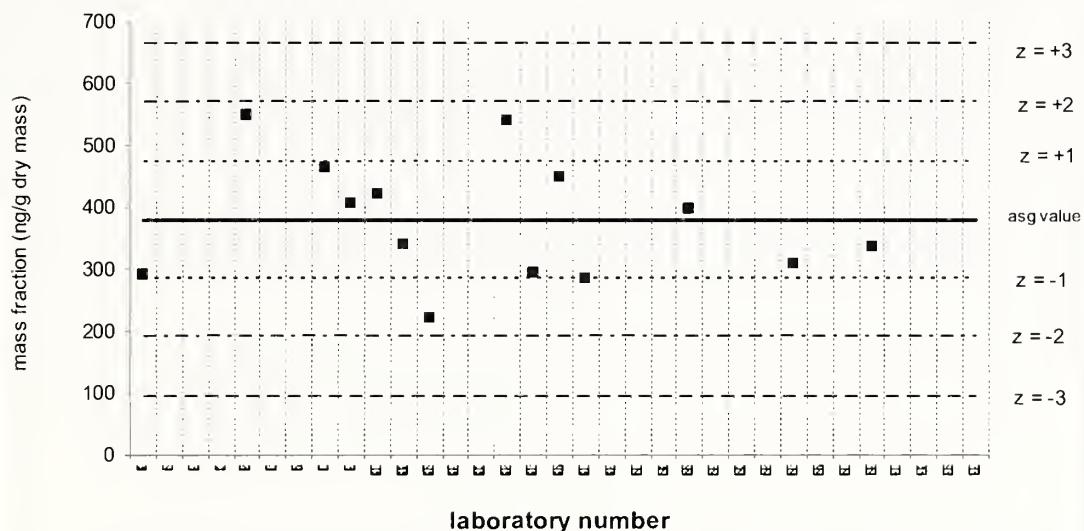
Reported Results: 15 Quantitative Results: 10



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

$\alpha\beta\beta$ 20R-Cholestane**QA10SED01**Assigned value = 379 ng/g (dry mass) $s = 99$ ng/g (dry mass) 95% CI = 52 ng/g (dry mass)

Reported Results: 14 Quantitative Results: 14

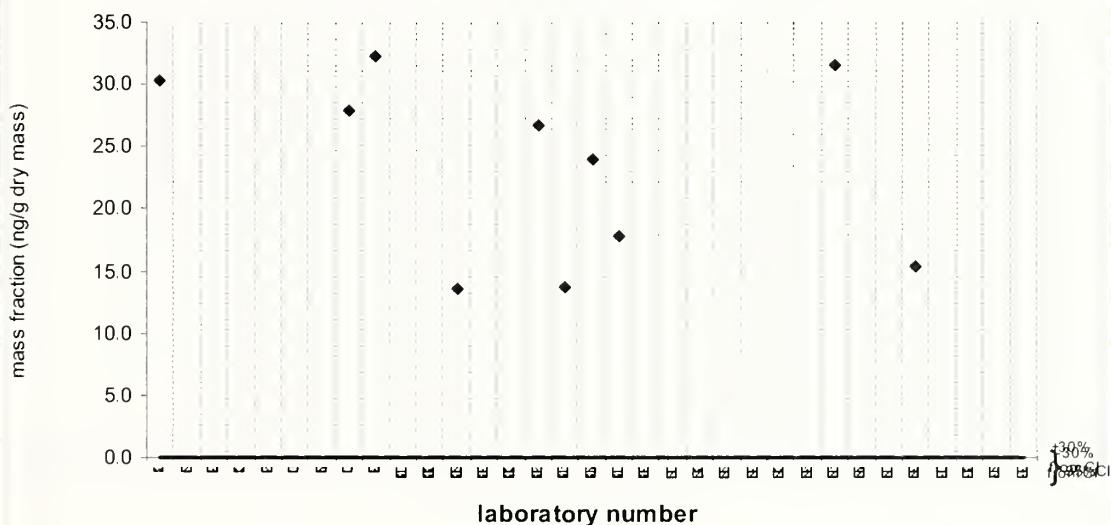


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

 $\alpha\beta\beta$ 20R-Cholestane**SRM 1941b**

Target Value = no target ng/g (dry mass)

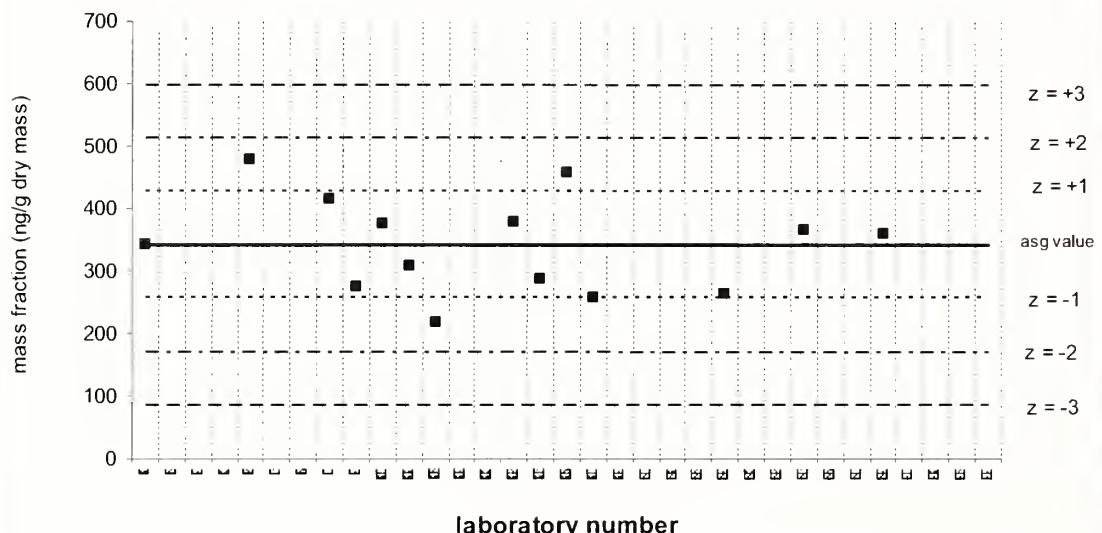
Reported Results: 13 Quantitative Results: 10



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

$\alpha\beta\beta$ 20R 24S-Methylcholestane**QA10SED01**Assigned value = 342 ng/g (dry mass) $s = 77$ ng/g (dry mass) 95% CI = 40 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 15 Lab 20 reported 1448 ng/g (dry mass)

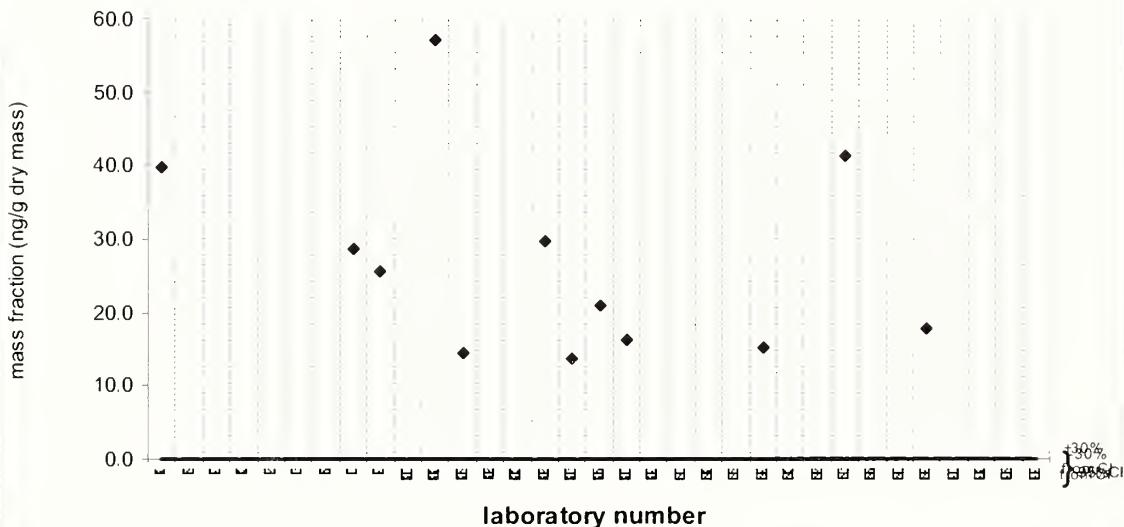


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

 $\alpha\beta\beta$ 20R 24S-Methylcholestane**SRM 1941b**

Target Value = no target ng/g (dry mass)

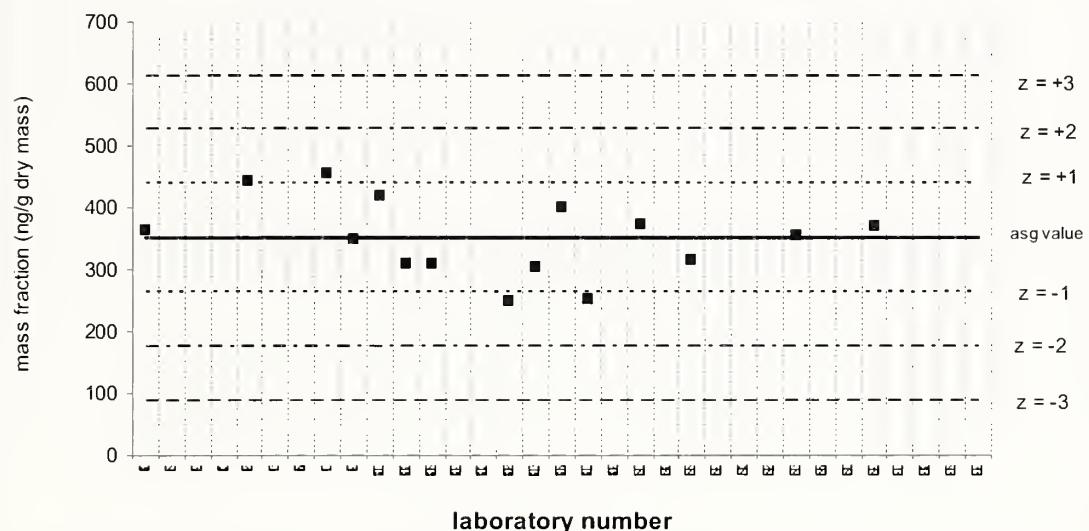
Reported Results: 15 Quantitative Results: 12



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

$\alpha\alpha$ 20R 24R-Ethylcholestane**QA10SED01**Assigned value = 351 ng/g (dry mass) $s = 62$ ng/g (dry mass) 95% CI = 31 ng/g (dry mass)

Reported Results: 16 Quantitative Results: 15

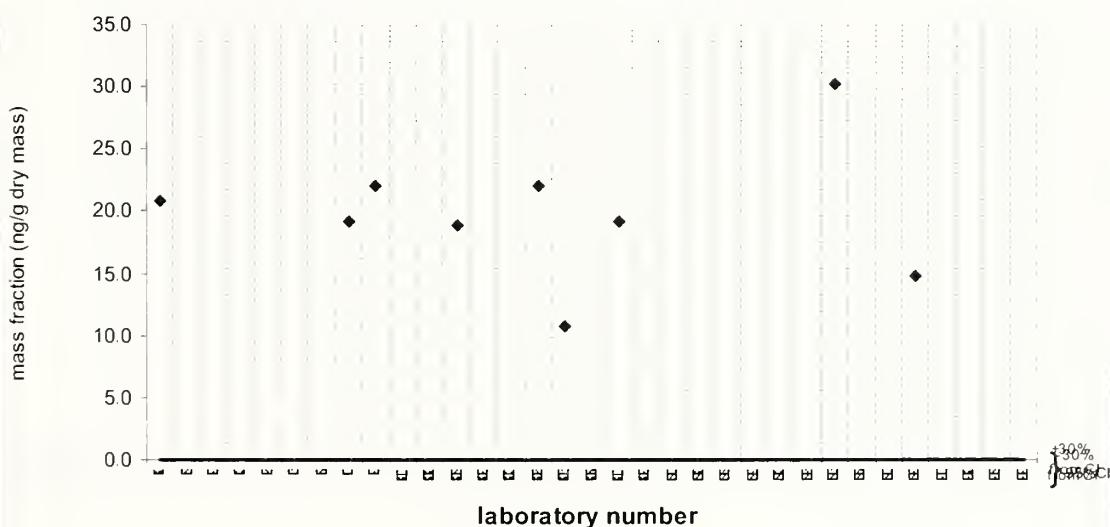


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

 $\alpha\alpha$ 20R 24R-Ethylcholestane**SRM 1941b**

Target Value = no target ng/g (dry mass)

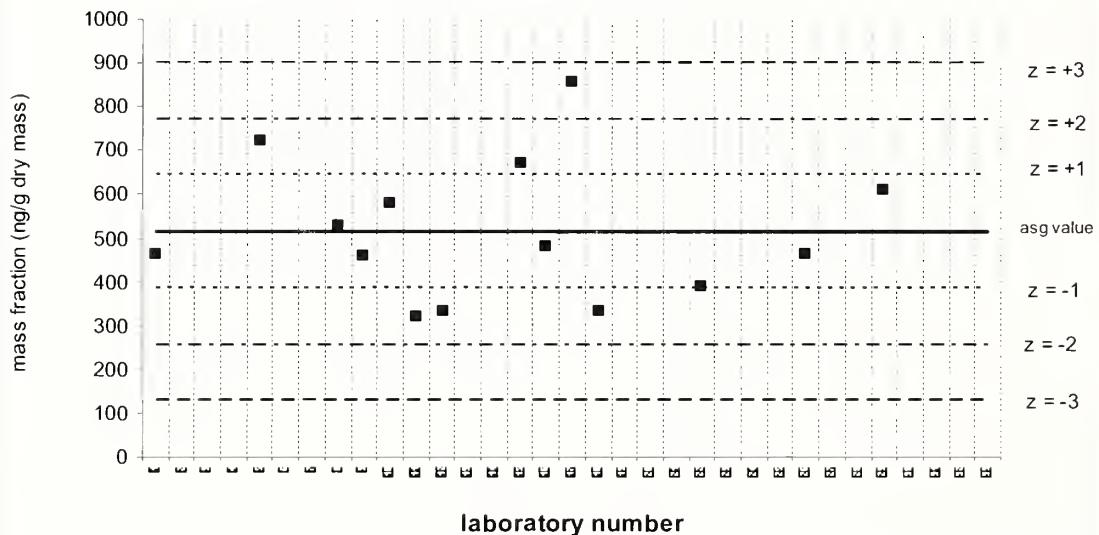
Reported Results: 15 Quantitative Results: 9



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

$\alpha\beta\beta$ 20R 24R-Ethylcholestane**QA10SED01**Assigned value = 515 ng/g (dry mass) $s = 159$ ng/g (dry mass) 95% CI = 83 ng/g (dry mass)

Reported Results: 14 Quantitative Results: 14

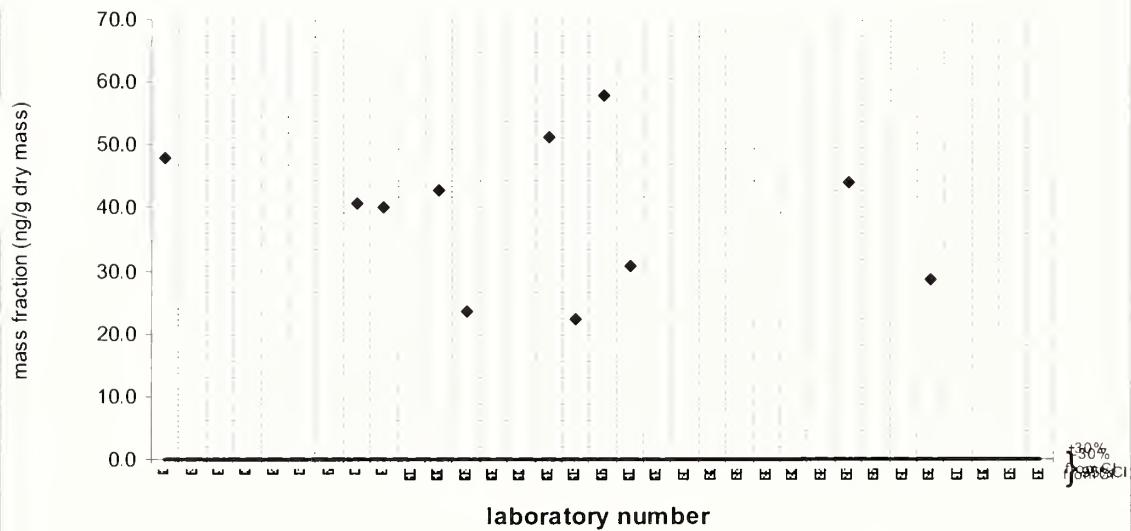


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

 $\alpha\beta\beta$ 20R 24R-Ethylcholestane**SRM 1941b**

Target Value = no target ng/g (dry mass)

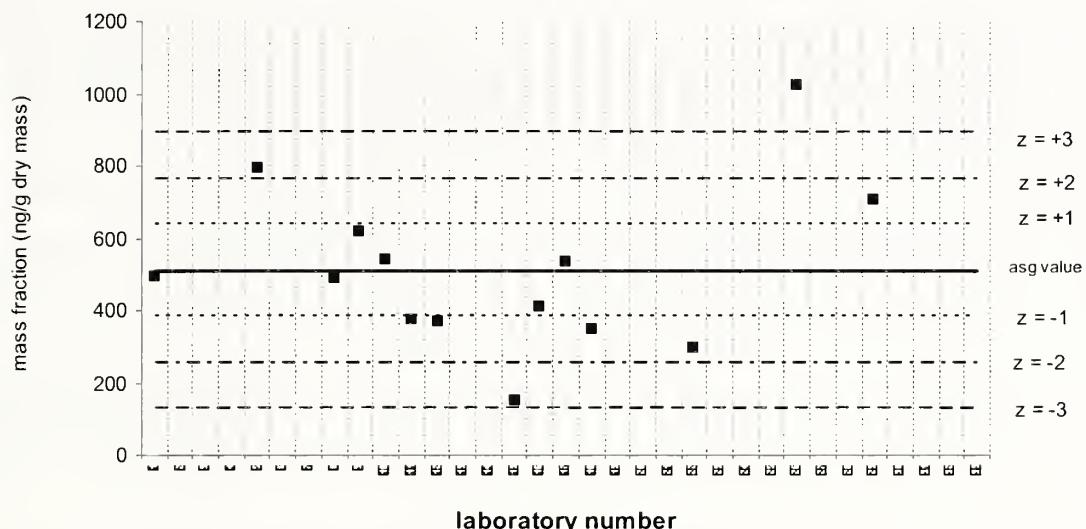
Reported Results: 13 Quantitative Results: 11



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17 α (H),21 β (H)-22R-Homohopane**QA10SED01**Assigned value = 511 ng/g (dry mass) $s = 223$ ng/g (dry mass) 95% CI = 117 ng/g (dry mass)

Reported Results: 14 Quantitative Results: 14

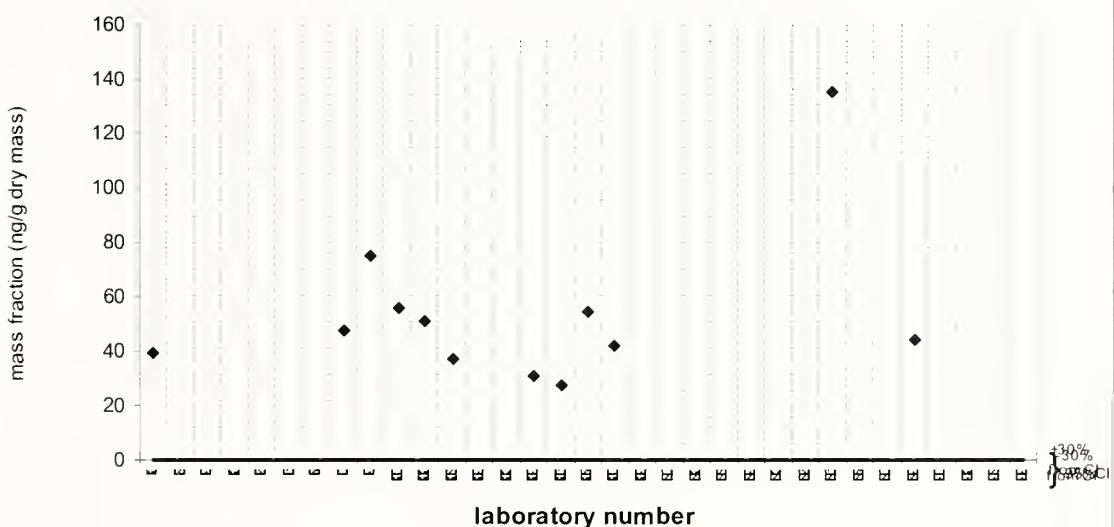


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

17 α (H),21 β (H)-22R-Homohopane**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 13 Quantitative Results: 12

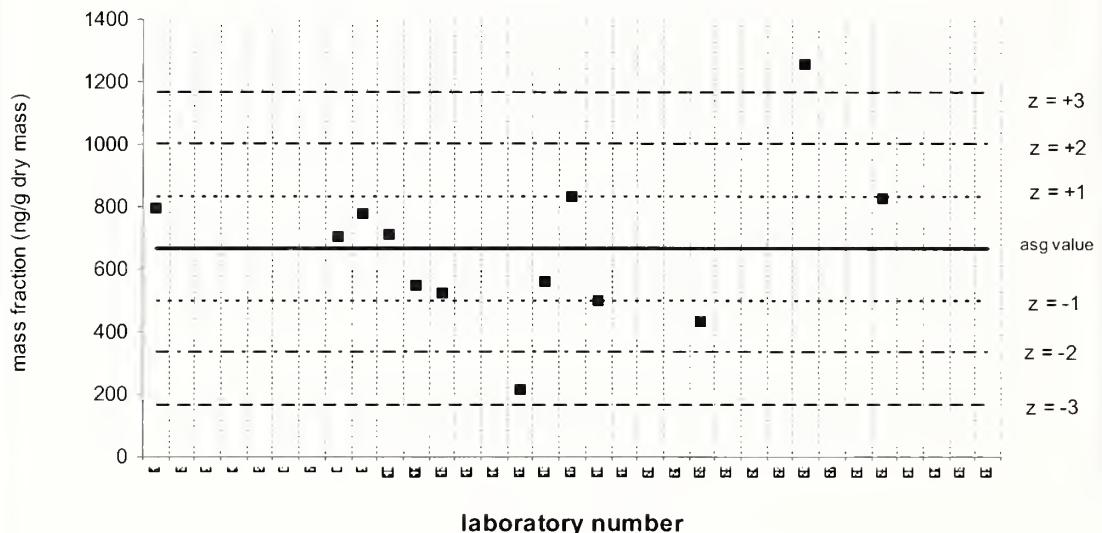


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17 α (H),21 β (H)- 22S-Homohopane**QA10SED01**

Assigned value = 666 ng/g (dry mass) s = 253 ng/g (dry mass) 95% CI = 137 ng/g (dry mass)

Reported Results: 13 Quantitative Results: 13

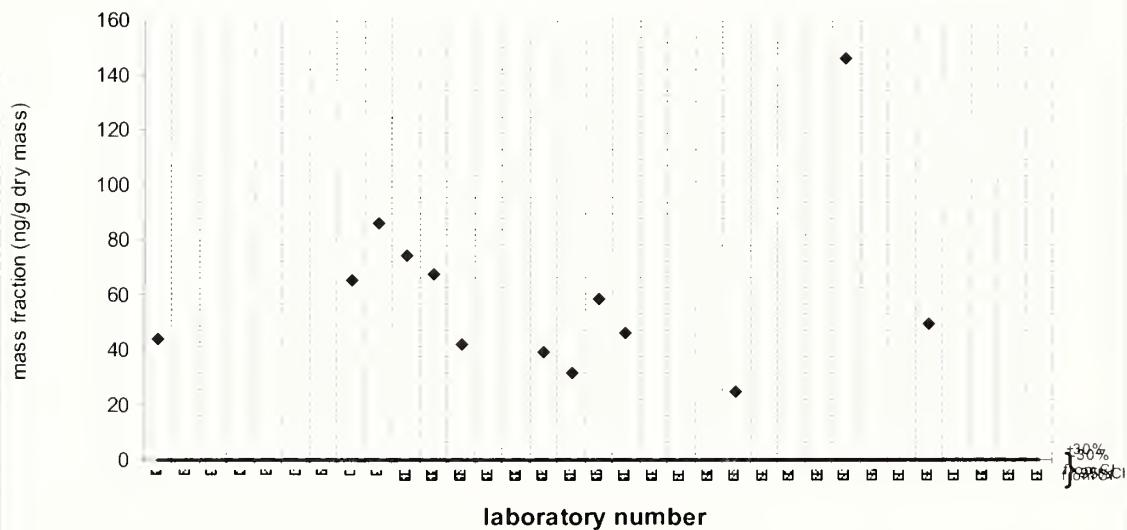


Solid line : exercise assigned value (EAV); dotted line: $z=\pm 1$ (25% from EAV); dotted/dashed line: $z=\pm 2$ (50% from EAV); dashed line: $z=\pm 3$ (75% from EAV)

17 α (H),21 β (H)- 22S-Homohopane**SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 14 Quantitative Results: 13



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Appendix E
Participants in the Sediment Interlaboratory Study QA10SED01 in
Alphabetical Order by Organization

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